

OFFICIAL REPORT OF PROCEEDINGS

BEFORE THE

NEW ENGLAND DIVISION

OF THE

COMMISSION OF BUSINESS, U. S. ARMY

HEAD OF OFFICE: LT. COLONEL MILLS L. BACHMANN
COMMISSION OF BUSINESS, U. S. ARMY

IN RE: REPORT OF: PUBLIC HEARING ON HIGH-RANK PROMOTION
FOR COLONEL-AT-LARGE, BRIGADE GENERAL AND
MAJOR-GENERAL.

PLACE: Brewster-Salvert School Auditorium
Newport, Rhode Island

DATE: Tuesday, 2 October 1956
1:00 P.M. U. S. A. T.

Pages: 130

Reported by: HARVEY A. LAJESK
51 PERSHING STREET
BOSTON, MASSACHUSETTS

Reporter: HARVEY A. LAJESK

Harvey A. Lajesk

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EXHIBITS

- EXHIBIT NO. 1 - - Notice of Public Hearing, which was not read into the record, is copied beginning on page twenty-four.
- EXHIBIT NO. 2 - - Prepared statement submitted by Mr. George W. Lawton, representing Mr. Irving H. Beck, City Manager of Newport, Rhode Island, was read into the record beginning on page thirty-seven.
- EXHIBIT NO. 3 - - Prepared statement, and attached statements from Officials of the Town of Portsmouth, Rhode Island, submitted by Mr. Henry Ethier, representing the Town of Portsmouth, Rhode Island, a portion of which was read into the record beginning on page forty-five.
- EXHIBIT NO. 4 - - Prepared statement submitted by Mr. Francis J. Murphy, representing the Bristol Development Commission, Bristol, Rhode Island, which was read into the record beginning on page fifty-five.
- Included in this report are pictures, maps and letters which were not read into the record, which are copied beginning on page sixty.

1 d.

EXHIBITS

EXHIBIT NO. 5 - - Six large pictures submitted by Mr. Daniel Balhouse
on page eighty-two.

C E R T I F I C A T E

This is to certify that the attached proceedings before the Corps of Engineers, New England Division, Hearing Officer, Lt. Colonel Miles L. Wachendorf, presiding, in the matter of:

Public Hearing on Hurricane Protection for Massachusetts Bay, Rhode Island and Massachusetts, held at Newport, Rhode Island, Cranston-Salvert School Auditorium, on Tuesday, 2 October 1956, at 8:00 P.M. Eastern Daylight Saving Time, were had as herein appears, and that this is the original transcript thereof for the files of the Corps of Engineers.

Harvey L. Lazrus

HARVEY L. LAZRUS
OFFICIAL REPORTER

P R E S E N T

✓ Lt. Colonel Miles L. Wachendorf, New England Division,
Corps of Engineers, Boston, Massachusetts.

Mr. Herman Kromer, Chief of the Engineering Division,
New England Division, Boston, Massachusetts.

✓ Mr. John B. McAlear - - Engineer, Engineering Division,
New England Division, Corps of Engineers, Boston, Massachusetts.

Mr. Lincoln Reid - - Engineer, Engineering Division,
New England Division, Corps of Engineers, Boston, Massachusetts.

✓ Mr. E. Benson Beservey - - Engineer, Engineering Division,
New England Division, Corps of Engineers, Boston, Massachusetts.

- - - - -

Adams, P. John - - Hazard Road, Newport, Rhode Island.

Representing - Newport Improvement Assoc-
iation.

Adams, Richard C. - - 41 Bellevue Avenue, Newport, Rhode
Island. Occupation - Real Estate,

Insurance. Representing - Real Estate
Board of Newport.

Ando, Frank - - Newport, Rhode Island. Manager, Leo's

First and Last Stop, Cafe; 112 Long Wharf,
Newport, Rhode Island. Representing -
Leo's First and Last Stop Cafe.

Andron, D. F. - - 16 Howard Street, Newport, Rhode Island,

Occupation - Building contractor - Real

Estate operator.

- Arnold, Davis G. - - Portsmouth, Rhode Island. Occupation -
Attorney at Law. Representing - Director
of Civil Defense.
- Ashby, Sidney - - 169 East Main Road, R.F.D. #2, Newport,
Rhode Island. Occupation - Dairyman.
Representing - Portsmouth Town Council,
Portsmouth, Rhode Island.
- Austin, Richard - - 85 Clearview Avenue, R.F.D. #2, Newport,
Rhode Island. Occupation - Electrical
Engineer. Representing - Newport County
Outboard Boating Club; and Better Harbors
and Rivers in Rhode Island, Incorporated.
- Belcock, William J. - - 819 Indian Avenue, Middletown, Rhode
Island. Occupation - Nurseryman.
Representing - Newport Yacht Club.
- Barter, James A. - - Coggeshall Avenue, Newport, Rhode Island,
Occupation - Contractor. Representing -
Newport Waterfront Committee; and
Newport Yacht Club.
- Beck, Irving H. - - City Hall, Newport, Rhode Island.
Occupation - City Manager.
- Benson, Mrs. John Howard - - 62 Washington Street, Newport,
Rhode Island. Occupation -
John Stevens' Shop.

Holhouse, Daniel C. - - 127 Thomas Street, Newport, Rhode Island. Occupation - Executive Secretary, Newport County Chamber of Commerce.

Horden, Maurice - - Water Street, Portsmouth, Rhode Island. Occupation - State Representative.

Rosworth, R. D., Jr. - - P. O. Drawer 4, Bristol, Rhode Island. Occupation - Editor. Representing - Bristol, Rhode Island Harbor Development Commission.

Rowan, William - - 3 Newton Court, Newport, Rhode Island. Occupation - Tree Gardener.

Brightman, T. P. - - 125 Gibson Road, Bristol, Rhode Island. Occupation - Purchasing Agent. Representing - Bristol Harbor Development Commission.

Brownell, Agnes F. - - 25 Bridge Street, Newport, Rhode Island. Representing - Point Association.

Brownell, Edwin H. - - 25 Bridge Street, Newport, Rhode Island. Occupation - Silversmith. Representing - Point Association of Newport.

Brownell, Mrs. Edwin H. - - 25 Bridge Street, Newport, Rhode Island. Occupation - Homemaker.

Representing - The Point Association. Resident of low lands - affected by high water.

Dugges, W. L. - - Hammersmith Farm, Newport, Rhode Island.

Occupation - Superintendent of Hammersmith Farm. Representing Mr. Hugh D. Auchincloss, owner of Hammersmith Farm.

Genavan, John E. - - 40 Grafton Street, Newport, Rhode

Island. Occupation - Government employee.

Carlson, Ralph L. - - United States Weather Bureau, T. F.

Green Airport, Hills Grove, Rhode Island.

Occupation - Meteorologist. Representing - United States Weather Bureau.

Chapin, Charles F. - - 3 Lucille Drive, Barrington, Rhode

Island. Occupation - Investments.

Representing - Barrington; and Yacht Club.

Chapin, Mrs. Charles F. - - 3 Lucille Drive, Barrington,

Rhode Island. Occupation -

Housewife. Representing -

Barrington Yacht Club.

Chase, William C. - - 286 Chase's Lane, Middletown, Rhode

Island. Occupation - Merchant - Chase and Chase, 202 Thames Street, Newport.

- Coughlin, Edward H. - - 19 Friendship Place, Newport, Rhode Island. Occupation - Commissary Department, Naval Hospital.
- Covell, William King - - 72 Washington Street, Newport, Rhode Island. Occupation - Teacher (retired). Representing - Waterfront Commission, City of Newport, Rhode Island.
- Crocker, Charles W. - - 24 Dudley Avenue, Newport, Rhode Island. Occupation - Retired.
- DeArruda, Anthony - - R.F.D. #9, Portsmouth, Rhode Island. Occupation - Farmer. Representing - Portsmouth Town Council.
- DeBethune, Miss Adelaide - - 118 Washington Street, Newport, Rhode Island. Occupation - The St. Leo Shop, Incorporated. Representing - Mr. and Mrs. Gaston P. DeBethune.
- Deery, John W. - - 54 Bridge Street, Newport, Rhode Island. Occupation - Owner C and D Transportation Company.
- BelNero, David E. - - 54 Parker Avenue, Newport, Rhode Island. Occupation - Dry Cleaner. Representing - Newport Yacht Club.
- BelNero, James V. - - 70 Plenty Street, Providence, Rhode

Island. Occupation - Plant superintendent.

Dennan, Arthur A. - - 3018 East Main Road, Portsmouth, Rhode Island. Occupation - Executive Salesman. Representing - Portsmouth Democratic Town Committee; Portsmouth Veterans of Foreign Wars.

Dennan, Mrs. Arthur A. - - 3018 East Main Road, Portsmouth, Rhode Island. Occupation - Advertising. Representing - Welcome Wagon.

Dennis, Oletus - - 8 Walcott Avenue, Newport I., Rhode Island. Occupation - Engineer. Representing - Torredo Range Instrumentation Gould Island, USNUS, Newport, Rhode Island.

Dencome, Ernest F. - - 160 Bristol Ferry Road, Portsmouth, Rhode Island. Occupation - Weyerhaeuser Sales Manager. Representing - Town of Portsmouth Commission.

Dickerson, James B. - - 179 Wampanac Road, East Greenwich, Rhode Island. Occupation - Salesman.

Dolbashian, E. M. - 80 Turnpike Avenue, Portsmouth, Rhode Island; Occupation - Town Solicitor, Portsmouth, Rhode Island. Representing - Portsmouth, Rhode Island.

Donnell, E. H. - - 11 Toppa Boulevard, Newport, Rhode Island.

Occupation - Pilot, Navy.

Downey, Benjamin - - 1 Gardiner Street, Newport, Rhode
Island.

Duce, Herbert S. - - Polaine Jewelers, 216 Thames Street.
Occupation - Owner.

Dunn, Edward P. Jr. - - 5 Haswell Avenue, Newport, Rhode
Island. Occupation - Electrical
Engineer.

Dwyer, Francis G. - - 513 Paradise Avenue, Middletown, Rhode
Island. Representing - Rhode Island
House of Representatives, Middletown.

Eccles, Henry B. - - Rear Admiral, United States Navy.
Retired. 101 Washington Street, Newport,
Rhode Island. Occupation - Retired
Naval Officer.

Ethin, Henry J. - - 522 Back Avenue, Portsmouth, Rhode Island.
Occupation - Chairman, Town Council,
Portsmouth, Rhode Island.

Feiner, Alfred F. - - 57 Poplar Street, Newport, Rhode
Island. Occupation - Salesman. Rep-
resenting - Newport Artillery Company.

Finger, Charles - - 721 Hope Street, Bristol, Rhode Island.
Occupation - Businessman. Representing -
Bristol Chamber of Commerce, Bristol,
Rhode Island.

- Finger, Albert - - Martin Avenue, Bristol, Rhode Island.
Occupation - Businessman. Representing
Bristol Chamber of Commerce, Bristol,
Rhode Island.
- Finn, Thomas J. - - 1A Pennacook Street, Newport, Rhode
Island.
- Fitzgerald, Veronica - - 30 Cranston Avenue, Newport, Rhode
Island. Occupation - Teacher.
- Galvin, Thomas P. - - 48 Toppa Boulevard, Newport, Rhode
Island.
- Ganin, Mrs. Thomas P. - - 48 Toppa Boulevard, Newport, Rhode
Island.
- Gardner, Roger J. - - DP&O IND. Occupation - Engineer, United
States Navy.
- Geisler, Herbert A. - - President, c/o The Town Creamery,
Incorporated, 775 Hope Street, Bristol,
Rhode Island. Manager of the Town
Creamery, Incorporated. Representing -
John P. Meyer, Treasurer of the
Town Creamery, Incorporated.
- Geisler, Mrs. Herbert A. - - c/o The Town Creamery, Incorpor-
ated, 775 Hope Street, Bristol,
Rhode Island. Occupation -
Secretary, The Town Creamery,
Incorporated. Representing -

John P. Meyer, Treasurer, The
Town Creamery, Incorporated.

Grant, Albert E. - - Box 25, Tiverton, Rhode Island. Occu-
pation - Contractor. Town Official.

Greichen, Robert B. - - 35 Earl Avenue, Newport, Rhode
Island. Occupation - Sales Manager.
Representing - Newport Waterfront
Commission.

Griffith, Davis - - Representing - The Providence Journal,
172 Thames Street, Newport, Rhode Island.
Occupation - Reporter.

Haas, Albert - - Hotel Viking, Newport, Rhode Island.
Occupation - Rear Commodore, Ida Lewis
Yacht Club.

Hasbly, Herbert S. - - 165 Highland Road, Tiverton, Rhode
Island. Occupation - Town Clerk.
Representing - Director of Civil
Defense, Tiverton, Rhode Island.

Hannett, Fred W. Jr. - - 161 Thames Street, Newport, Rhode
Island. Occupation - Executive
Vice President, The Newport Gas Light
Company, Newport, Rhode Island.

Harrington, J. Gilbert - - 44 Elm Street, Newport, Rhode
Island. Occupation - Photographer.

Harter, C. J. - - 53 Washington Street, Newport, Rhode Island.

Representing - Point Association, Newport,
Rhode Island.

Harter, Mr. C. J. - - Box 532, Newport, Rhode Island.

Representing - Point Association.

Hatch, H. M. - - Representing - W. T. Grant Company, 139 Thames
Street, Newport. Occupation - Store man-
ager.

Hatlob, John J. - - 67 Bridge Street, Newport, Rhode Island.

Occupation - Package Store Owner.

Heald, B. K. - - Representing - New York, New Haven and

Hartford Railroad Company, Boston, Mass.

Occupation - Assistant Maintenance Engineer.

Hopf, John M. - - Newport, Rhode Island. Occupation -

Retired.

Hopf, John T. - - 10 Red Cross Terrace, Newport, Rhode Island.

Occupation - Commercial and Aerial photo-
graphy.

Horvitz, Allie - - 329 Thames Street, Newport, Rhode Island.

Representing Allie Horvitz's Army and

Navy Stores, Incorporated.

Howard, P. B. - - 67 Bennington Road, Cranston 10, Rhode

Island. Occupation - Mortgage Loan

Appraiser.

Howison, John - - 114 Second Street, Newport, Rhode Island.

Occupation - City Engineer.

- Hughes, W. D. F. - - Reverend. St. Columba's Rectory,
Middletown, Rhode Island. Occupation -
Priest.
- Issel, Henry - - 216 State Office Building, Providence, Rhode
Island. Occupation - Chief, Rhode Island
Division of Harbors and Rivers.
- James, Mack C. - - Pawtucket, Rhode Island. United States
Navy, Retired. Representing - Democratic
Party.
- Jennell, Emil E. - - 41 Hunter Avenue, Newport, Rhode Island.
Occupation - City Editor. Representing -
Hazard's Beach, Incorporated.
- Kaull, James T. Jr. - - Newport Daily News, 140 Thames Street,
Newport, Rhode Island. Occupation -
Reporter.
- Kenny, Francis H. - - 137 Massachusetts Boulevard, Portsmouth,
Rhode Island. Occupation - Salesman.
Representing - Portsmouth Democratic
Town Committee.
- Kenny, Mrs. Francis H. - - 137 Massachusetts Avenue, Ports-
mouth, Rhode Island. Occupation -
Housewife.
- King, F. W. - - 5 Caswell Avenue, Newport, Rhode Island.
Occupation - Assistant to Plans Officer,
United States Naval Base, Newport, Rhode

Island.

King, Peter - - 598 Paradise Avenue, Middletown, Rhode
Island. Occupation - Store Manager.

Kinney, Mr. David S. - - 17 Adam's Point Road, Barrington,
Rhode Island. Occupation - Engineer.
Representing - Barrington Yacht
Club.

Kirby, James W. - - 298 Prospect Avenue, Newport, Rhode
Island. Occupation - Assistant Manager,
Newport Oil Corporation. Representing -
Globe Transportation Company.

Kirby, Jerome - - 298 Prospect Avenue, Middletown, Rhode
Island. Occupation - Manager, Newport
Oil Corporation and Globe Transportation
Company.

Lawton, S. M. - - 128 Long Wharf, Newport, Rhode Island.
Representing - Globe Transportation
Company, 128 Long Wharf.

Lawton, George William - - 269 Gibbs Avenue, Newport, Rhode
Island. Occupation - Fish Dealer.
Representing - Councillor of
Newport, Rhode Island, Vice Chairman,
Chairman of the Waterfront Committee,
Newport, Rhode Island.

Lehmann, H. R., Jr. - - P.O. Box 608, Newport, Rhode Island.

Occupation - Optician.

- Lewis, Dean J. - - 42 Spring Street, Newport, Rhode Island.
Occupation - Lawyer. Representing -
Private Property Owner, Thames Street,
and Chairman, Newport Republican City
Committee.
- Lewis, George D. - - Tiverton, Rhode Island. Occupation -
Wholesale fish.
- Lewis, George F. - - 14 Morgan Street, Newport, Rhode Island.
Occupation - Lieutenant, United States
Coast Guard. Retired. Representing -
Newport Water Front Commission.
- Leys, William H. - - 228 Gibbs Avenue, Newport, Rhode Island.
Occupation - Merchant. Representing -
Chamber of Commerce.
- Lippitt, Samuel A. - - 48 Catherine Street, Newport, Rhode
Island. Occupation - Real Estate.
Representing - David Lippitt and
Ethel E. Lippitt, partners.
- Loftus, Murray - - 139 Thames Street, Newport, Rhode Island.
Occupation - Assistant Manager, W. T,
Grant Company.
- Lynch, C. Robert - - Professional Engineer, 9 Blackwell
Place, Newport, Rhode Island.
- Lynch, Robert E. - - Oak View Terrace, Middletown, Rhode

Island. Occupation - Civil Engineer.

Lynde, Robert E. - - 60 Balsam Street, Warwick 5, Rhode
Island. Occupation - Meteorologist.
Representing - United States Weather
Bureau.

Martins, V. - - 744 Hope Street, Bristol, Rhode Island.
Occupation - Diner.

Mcaskill, John N. - - 20 Slocum Street, Newport, Rhode
Island. Occupation - Bank Teller.
Representing - Rhode Island Hospital
Trust Company, Newport.

McLarsun, J. C. Earle - - 159 Thames Street, Newport, Rhode
Island. Occupation - Vice President,
General Manager Newport Electric
Corporation, Newport, Rhode Island.

McMurrugh, Frank M. - - Senator. Highland Road, Tiverton,
Rhode Island.

Meservey, F. Benson - - 43 Park Street, Wollaston 70,
Massachusetts. Occupation - Civil
Engineer. Representing - Corps of
Engineers, U. S. Army.

Morris, Henry - - 39 Connection Street, Newport, Rhode Island
Occupation - Metal Pattern maker. Rep-
resenting - Newport Yacht Club.

Murphy, Francis J. - - 6 Walley Street, Bristol, Rhode Island.

Occupation - President and treasurer, F. J. Murphy, Inc.

Representing - Bristol Harbor Development Commission.

Wilson, William H. - - 26 Cranston Avenue, Newport, Rhode
Island. Occupation - Head Gardener.

Montzow, Dr. David - - 31 Third Street, Newport, Rhode
Island. Occupation - Optometrist.

Montzow, Mrs. David - - 31 Third Street, Newport, Rhode
Island. Occupation - Housewife.

Montzow, Joshua - - 237 Thames Street, Newport, Rhode Island.
Occupation - Retail Furniture. Rep-
resenting J. N. Furniture Company.

Norris, Russell T. - - 59 Temple Place, Boston, Massachusetts.
Occupation - Fish and Wildlife Adm-
inistrator. Representing - United
States Fish and Wildlife Service.

O'Brien, James S. - - 42 Spring Street, Newport, Rhode
Island. Occupation - Attorney at Law.
Representing - City of Newport, Council-
man, First Ward.

O'Connell, J. T. - - 89 Long Wharf, Newport, Rhode Island.
Occupation - Hardware Dealer. Rep-
resenting Newport Oil Corporation; and
Peckham Coal and Oil Company.

O'Donnell, Edward J. - - 13 Norman Street, Newport, Rhode
Island. Occupation - Heating Mechanic.

Osterberg, C. A. - - Box 348, Bristol, Rhode Island.

Occupation - None. Representing -
Mr. and Mrs. Martin Wells.

Paulson, Marvin T. - - Lieutenant Commander, Coast and
Geodetic Survey, Box 271, Wickford,
Rhode Island. Occupation - Hydro-
graphic Survey, Narragansett Bay.

Pilote, Alfred R. - - 33 Renfrew Avenue, Middletown, Rhode
Island. Occupation - Investment
Consultant, Trust Funds.

Ruggieri, Victor R. - - 34 Elm Street, Newport, Rhode Island.
Occupation - Salesman.

Shoa, Dennis J. - - 12 Brooks Avenue, Newport, Rhode Island.
Occupation - Electrical Contractor.

Sherman, Arthur A. - - Portsmouth, Rhode Island. Occupation -
Town Clerk.

Sherman, William A. - - 63 Rhode Island Avenue, Newport,
Rhode Island. Occupation - Banking.
Representing - Industrial National
Bank.

Silvia, John A. - - Middletown Highway Department, Middletown,
Rhode Island. Occupation - Highway
surveyor.

Simmons, S. E. - - 18 Houghten Street, Barrington, Rhode
Island. Occupation Engineer. Represent-

ing - Barrington Yacht Club.

Smith, Betty Hamilton - - 36 Walnut Street, Newport, Rhode Island. Occupation - Teacher.
Representing - Point Association of Newport.

Smith, David L. - - 36 Walnut Street, Newport, Rhode Island. Occupation - Supervising Principal.
Representing - Point Association.

Smith, Lowell - - 3 Woodlawn Avenue, Bristol, Rhode Island. Representing - Bristol Harbor Commission.

Smyth, Thomas J. - - 3 Aborn Street, Newport, Rhode Island. Occupation - Postal Clerk.

Souss, John J. - - 1026 Main Road, Portsmouth, Rhode Island. Occupation - Builder. Representing - Town Council.

Spencer, Samuel C. - - Box 526, Newport, Rhode Island. Representing - Newport Ship Yard, Inc.

Stohlberg, John A. - - 13 Brewer Street, Newport, Rhode Island. Occupation - Carpenter.
Representing - Newport Yacht Club; Newport Ship Yard; Newport County Outboard Club.

Stone, Andrew A. - - 225 Thomas Street, Newport, Rhode Island. Occupation - Department Store Owner, Boston Store. Representing -

Retail Board, Chamber of Commerce;
 President - Thames Street Merchants
 and Property Owners Association.

Stringer, Louis D. - - 37 Coulters Road, Cranston, Rhode
 Island. Occupation - Fishery Research
 Biologist. Representing - United
 States Fish and Wildlife Service.

Sullivan, Bert - - 63 Hubbard Road, Cranston, Rhode Island.

Sullivan, Francis X. - - 79 Ray Street, Newport, Rhode
 Island. Occupation - Real Estate
 Corporation. President and Con-
 tractor. Representing - Francis
 X. Sullivan Real Estate Corporation;
 Chairman - Newport Bridge and
 Tunnel Commission.

Taylor, Erich A. - - 38 Powal Avenue, Newport, Rhode Island.
 Occupation - Chemistry Master.

Taylor, G. H. - - P. O. Box 571, Newport, Rhode Island.
 Occupation - Radio Newscaster. Representing
 Station WRIB - Fall River News, United
 Press.

Tieman, Captain E. J. - - 4 Red Cross Terrace. Occupation -
 Real Estate and Insurance.
 Representing - Councilman at
 Large.

- Toenresen, E. P. - - E. P. Toenresen, 23 Shangri-la Lane,
Newport, Rhode Island. Occupation -
Engineer.
- Viall, Robert E. - - 3 Third Street, Newport, Rhode Island.
Occupation - Garage Owner.
- Violet, John M. - - 21 Green Street, Newport, Rhode Island.
Occupation - Harbormaster, City of
Newport.
- Violette, Ward D. - - 35 Washington Street, Newport, Rhode
Island. Occupation - Antique Dealer.
Representing - Mr. D. E. O'Leary; and
Mrs. E. W. O'Leary, 35 Washington
Street, Newport.
- Wardwill, Samuel C. - - 873 Hope Street, Bristol, Rhode
Island. Occupation - Harbormaster.
- Watson, John E. - - P. O. Box 156, Wickford, Rhode Island.
Occupation - Fishery Research Biologist.
Representing - United States Fish and
Wildlife Service.
- Weaver, George D. - - 247 Park Holm.
- Weaver, George D. Jr. - - 9 Chestnut Street, Newport, Rhode
Island. Occupation - Firefighter.
Representing - Point Association
of Newport, Property Chairman.
- Weaver, Kathryn - - 247 Park Holm. Occupation - housewife.

- Weaver, Mrs. Joseph - - 67 Second Street, Newport, Rhode
Island. Occupation - Teacher.
Representing - Point Association
of Newport.
- Weaver, S. J. - - 67 Second Street, Newport, Rhode Island.
Occupation - Teacher. Representing -
Point Association.
- Webber, George W. - - 59 Temple Place, Boston, Massachusetts.
Occupation - Biologist. Representing
United States Fish and Wildlife
Service.
- Weiss, Richard S. - - 42 Walnut Street, Newport, Rhode
Island. Occupation - Mechanical
Engineer.
- Weiss, Sarah W. - - 42 Walnut Street, Newport, Rhode Island.
Occupation - Housewife.
- White, Colonel James C. - - United States Army, Retired. 37
Catherine Street, Newport, Rhode
Island. Occupation - Director,
Civil Defense.
- Zoruard, Mrs. Otto - - 20 Hunter Avenue, Newport, Rhode
Island. Occupation - Housewife.

LT. COLONEL MILES L. WACHENDORF: Ladies and gentlemen, will you please be seated.

This hearing will come to order.

By way of introduction, I am Miles L. Wachendorf. I am a Lieutenant Colonel in the United States Army Corps of Engineers. And here tonight I represent Brigadier General Robert J. Fleming, Jr., who is the Division Engineer of the New England Division of the Corps of Engineers. We have our offices at 150 Causeway Street, in Boston.

I would like to introduce some other members of our staff, who will assist me, participate with me in this hearing here this evening. On my right, Mr. Herman J. Kropper, Chief of our Engineering Division, and Mr. John B. McAlser, who has been in charge, the chief engineer, for the Narragansett Bay portion of our hurricane studies.

Now the purpose of this hearing tonight was explained formally in a public notice which we sent to everyone we knew to be interested in this subject. We have copies of the notice here together with the list of people to whom it was sent. If anyone wishes to examine this notice or the list of people it will be available at the conclusion of the hearing.

I will omit the reading of the formal notice.

(The following Notice of Public Hearing which was not read into the record, is marked Exhibit Number One.)

CORPS OF ENGINEERS, U. S. ARMY
OFFICE OF THE DIVISION ENGINEER
NEW ENGLAND DIVISION

150 CAUSEWAY STREET

BOSTON 14, MASS.

Address reply to

The Division Engineer.

Refer to File No. NEDSW.

14 September 1956

TO WHOM IT MAY CONCERN:

NOTICE OF PUBLIC HEARING ON HURRICANE PROTECTIONFORMARRAGANSETT BAY, RHODE ISLAND AND MASSACHUSETTS

Pursuant to Section 2 of Public Law 71, 84th Congress, approved June 15, 1955, the Division Engineer has been directed to make an examination and survey of the coastal and tidal areas of the northeastern United States, with particular reference to areas where severe damages have occurred, including the Narragansett Bay area.

In order that the required report may fully cover the matter, Public Hearings will be held at 8:00 P.M. on the following dates and at specified places:

<u>Date</u>	<u>City</u>	<u>PLACE</u>
1 October	Providence, R. I.	Central High School, Pond Street
2 October	Newport, R. I.	Cranston-Calvert School Auditorium, near City Hall.
3 October	Fall River, Mass.	City Council Chamber, City Hall.

All interested parties are invited to be present or represented at the above time and place, including representatives of Federal, State, County and municipal agencies, and those of commercial, industrial,

cirle, highway, railroad and waterway transportation, and other interests, and property owners concerned. They will be afforded full opportunity to express their views concerning the character and extent of the protection desired and the need and advisability of its execution.

All of the many plans proposed by interested parties have been thoroughly investigated by the Division Engineer to determine the most practical and economical means of protection against hurricane tidal flooding. Thorough studies have been made for the Narragansett Bay area, including damage surveys; economic studies; historical research on hurricanes; extensive hydrographic surveys of tidal fluctuations, currents, salinities and temperatures; and soundings and borings at barrier sites. Several plans have been tested in a hydraulic model to determine their effect on hurricane tidal flooding and on normal ocean tides.

Two plans which have particular merit are described below.

(1) Upper Bay Barrier at Fox Point - A dam across the Providence River at Fox Point, in the city of Providence, Rhode Island, with sluice gates to pass normal river and tidal flows, and a pumping station to dispose of storm runoff and river flow when the gates are closed.

(2) Lower Bay Barriers.

(a) East Barrier across the East Passage near Bull Point on Conanicut Island to Newport Neck. A rock barrier with a navigation opening.

(b) West Barrier across the West Passage immediately

below the Jamestown Bridge. A rock barrier with a navigation opening.

(c) Sakonnet River Barrier across the head of the Sakonnet River near Island Park at Tiverton, Rhode Island. Concrete and rock fill dam, with a gated navigation opening.

Sponsors of protective measures are urged to present pertinent factual material bearing upon the general plans of protection desired and the economic justification of the undertaking. Opposing interests, if any, are also urged to state the reasons for their position.

Oral statements will be heard, but for accuracy of record all important facts and arguments should be submitted in writing, in quadruplicate, as the records of the hearing will be forwarded for consideration by the Department of the Army. Written statements may be handed to the undersigned at the hearing or mailed to him beforehand.

Please bring the foregoing to the attention of persons known to you to be interested in the matter.

ROBERT J. FLEMING, JR.

Brigadier General, U.S. Army

Division Engineer

You will note that we have distributed, as you came in the door, to each person a yellow card. This card we request you to fill out so that we will have a record of the attendance at this hearing and it will also serve our use as a file of your address in the event we should have any future correspondence on this subject with you. If you will please fill out these cards, and if you address the hearing

bring them forward and be sure that you turn them in to someone of our representatives before you leave the hall.

Now in order that everyone may understand clearly the purpose of this meeting, this hearing, I believe it would be worth taking a few minutes at this time to discuss very briefly the general background of the hearing, and exactly what we hope to accomplish for you by it.

During the past eighteen years, three great hurricanes have struck the Narragansett Bay area, in September, 1938, and September, 1944, and August, 1954. These hurricanes, especially the ones in 1938 and 1954, are well remembered. They caused several tidal flooding that resulted in considerable damage and loss of life. As a result of the 1938 hurricane, sixty-two lives were lost in the State of Rhode Island. In the 1954 hurricane, damages in the Narragansett Bay area were approximately \$90,000,000. Based on today's values, the 1938 hurricane damages would amount to approximately \$115,000,000.

Now following the 1954 hurricane, the Eighty-fourth Congress enacted legislation providing for a thorough study of afflicted coastal areas with respect to hurricanes.

On June 15, 1955, Congress approved Public Law Seventy-one, which directed the Secretary of the Army in cooperation with the Secretary of Commerce and other Federal Agencies concerned with hurricanes, to cause an examination and survey to be made of the Eastern and Southern Seaboards of the United States with respect to hurricanes, and with particular reference to the areas where severe damages have

occurred.

Acting under the authority of Public Law Seventy-one, the New England Division of the Corps of Engineers in July, 1955, began studies to determine, first of all, practical methods for protection of Narragansett Bay against the highest hurricane tidal floods, which have occurred in the past, and to protect against greater hurricane floods if they occur in the future, and secondly to determine what protection is economically feasible from a comparison of costs with benefits.

We have examined about, in fact exactly, I believe, twenty plans which have been proposed by interested parties for the protection of Narragansett Bay among our considerations. After thorough reconnaissance, consideration of all proposals combined with our own preliminary studies, four alternative plans have been selected as the best of many proposals which have been made. A combination of two of the alternative plans appears to be, to us, the most favorable for the protection of the City of Providence, the immediate construction of a rock and earth-filled barrier and pumping station at Fox Point and for the general protection of Narragansett Bay, the construction of rock-filled barriers in lower Narragansett Bay.

I might explain, as you probably are aware, this is one of the three hearings which the New England Division of the Corps of Engineers is conducting in the Narragansett Bay area on this subject. Last night the first public hearing was held in Providence, tonight's hearing in Newport, and tomorrow in Fall River.

Be purposely located these hearings at widely scattered locations around the Bay to insure that everyone has an opportunity to participate if he so desires.

This public hearing is very important to both you and to us for several reasons. First of all, it affords you an opportunity to present your needs for protection. Secondly, it gives us a chance to inform you of the work which we have done on the survey to date, and to describe to you the plans which we believe at this time to be feasible. Third, the hearing is important because it gives everybody a chance to express his views frankly and fully.

Whether you favor the plan we will describe or other plans, or no plan at all, you should feel entirely free to express your opinion. The Corps of Engineers, in the preparation of the report on the hurricane survey, will weigh carefully all the evidence and arguments presented here this evening.

Everything that bears on the problem of hurricane protection from tidal flooding in this area, which anyone wants considered in the Division Engineer's study, should be presented tonight, if possible.

Now my plan for conducting this hearing tonight, briefly, is first to have a representative of our office describe briefly the results of our studies to date and explain the plan in general, as to the plan for protection of Narragansett Bay, which we propose. Then all those who wish to speak or wish to be heard in favor of the plan will be given a chance to speak and to support their stand on the matter. After we have heard from all those who are in favor of the

plan of protection, we will give the same opportunity to everyone who is opposed in any way. And finally, of course, there will be an opportunity for rebuttal or for questions.

I assure you that I intend to conduct this hearing in an informal manner, and I urge you if you have something to contribute, to feel free to express yourself. There will in no sense be any cross-examination of anyone who wishes to be heard.

And, however, so that we can have an orderly meeting here, and so our stenographer can be sure and get into the record everything you say, I request that when you address the gathering, that you come forward, stand at the rostrum and speak clearly and distinctly so everyone will be able to hear you. I also request that you state your name and the interest which you represent. If you wish to speak as an individual merely say so.

I mentioned that we were making a stenographic record of this hearing as well as the one last night and tomorrow. These will be attached to our record and will be available for a later consideration. If anyone here should desire a copy of this transcript for your own use you may make such arrangements, as you desire, with our contract stenographer at the conclusion of the hearing. Since our funds for this purpose are limited, of course, any such arrangements would have to be at your expense.

Anyone who has a written statement may read it into the record if he wishes, or if you prefer you may leave it here at the table and request it be attached to the record. We have asked in our

Public Notice that briefs be prepared in quadruplicate, I believe. However, I don't desire that this in any way limit anyone who wishes to speak. Please feel free to express yourself regardless of whether you have a typewritten brief or not.

Now Mr. Kropper, I will ask you first to discuss the results of our studies and explain briefly the plan which we propose.

MR. HERMAN J. KROPPER: Before describing the plans, I would like to give credit to the following organizations who have been participating with us in the study.

There is the Rhode Island Hurricanes Committee that was appointed by the Governor, and his representatives have met periodically with us. There is the Federal Fish and Wildlife Service, the State Department of Fish and Game, the Coast Geodetic Survey, the U. S. Geological Survey, the Rhode Island Marine Laboratory, the Engineering Departments of the many communities, the State Department of Health and others. There are several other organizations including private engineering companies, who have worked with us.

The project under consideration tonight might be roughly divided into two parts. The first is the Fox Point dam. This would be a barrier dam across the Providence River between Fox Point and India Wharf. The dam itself would be about twelve hundred feet long, of which eight hundred sixty feet would be a concrete gravity section. This section, which would be thirty to forty feet in width, would provide wharfage space at elevation twelve point five. The remainder of the dam would be made up of an assembly of four twenty by twenty-

four sluice gates.

These gates would serve to pass the normal water which flows into the upper harbor from the Moshassuck and prevent stagnation of the water, and also a concrete pumping station about two hundred feet long.

Now the sluice gates, as I touched on, would be the drop type closed by gravity and opened by electric power. These gates would be closed during the hurricane tides.

The pumping station contains five large pumps of a capacity of about eight thousand cubic feet per second, and they would discharge the river flood flow over the barrier in the event of a heavy storm or hurricane tide. In other words these pumps would provide for the run-off to the up-stream of the barrier. The pumps would be electrically driven.

The far end of the barrier would be a culvert which would provide for cooling water through the existing plant of the Narragansett Electric Power Company's steam plants. This project would amount to, cost approximately fifteen million dollars.

We come to the Lower Bay Barriers. These barriers are of massive stone construction. The first would extend from Conanicut Island to Newport Neck in rather deep water there. It is about one hundred sixty feet deep. It would have a quarry run stone core which would be capped by heavy derrick stones. It would have a top width of twenty feet and an elevation, a top elevation of the barrier, would be twenty-two feet above mean sea level. We propose a navigation opening

of one thousand feet wide and fifty feet deep at mean low water in this particular barrier. Let me say here, there have been proposals advanced for larger openings, and as a result of our model studies in Vicksburg we have found that we can not concur in the construction of a larger opening, because the barrier then does not fulfill its purpose. This is the maximum opening that we can permit, a thousand feet in width.

The West Barrier would be of similar construction as the East Barrier, and would extend across the West Passage down stream of Jameson Bridge. It would have a navigation opening of approximately four hundred feet in width and forty feet depth at mean low water. That channel would be centered on the ship channel which passes between the two main piers of the Bridge.

In construction of the West Barrier, there would be a highway fill across Round Swamp on Conanicut Island, and that would be raised to twenty-two feet above mean sea level. The barrier would be protected by stone facing.

The third structure would be the Tiverton Barrier, an earth and rock filled dike along the shoreline of the Island Park and Tiverton areas and a crossing near the Old Stone Bridge. This barrier would have an opening a hundred feet wide and thirty feet deep. However, the opening could be closed by large sector gates in time of storm. The town beaches would be maintained and improved on the ocean side of the dike, with access ramps provided.

I might point out that over to your left there is a sketch showing the Tiverton Barrier.

The cost figures or estimates - - The first cost of the East Barrier is approximately forty-three million dollars. For the West Barrier, it would be about fourteen million, seven hundred thousand dollars. For the Tiverton Barrier it would be about four million, nine hundred thousand dollars.

Now these Lower Bay Barriers would have no appreciable effect on the distribution of normal currents within the Bay areas above the barrier. The strengths of the currents within the Bay would probably be reduced about thirty percent. The maximum currents through navigation openings under mean tide will be between four and five knots. These currents will exist only through the openings and for short distances above and below them. For comparison, currents through the Cape Cod Canal are about four knots. The Race, of Long Island Sound has a current of 3.8 and a maximum current of about 5.8 at times of spring tides.

Computations made by the Narragansett Marine Laboratory of the University of Rhode Island based on the model results show that the salinity will be reduced from one to three parts per thousand. The normal salinity in the Bay varies from about eighteen parts per thousand at Providence to about thirty-two parts per thousand at Beavertail Point.

The effect of the Lower Bay Barriers on water temperatures in the Bay would be negligible, only about five tenths of a degree.

Flushing time for a particle to traverse through the Bay from Providence to Newport at the present time is about forty-two to forty-

five days. With the Lower Bay Barriers in place, this time would be increased from about forty-five to fifty-four days.

Should anyone have further questions with respect to the construction details, I will be glad to answer them later in the hearing or after the hearing.

LT. COLONEL WACHENDORF: Thank you, Mr. Kropper.

I might add one additional fact or one additional piece of information, which may be of general interest, before we proceed with the hearing, and that is we have -- perhaps a few explanatory words are in order. In considering whether or not a project is economically feasible, the Corps of Engineers determine the annual cost of such a project and compares this to the annual benefits, which this specific proposal or project would prohibit, or the annual benefits that would accrue. In the cost figure we include the initial cost of the project, that is the capitalized cost, its amortization over a fifty year period, normally an economic life of fifty years. And we include interest on the unamortized balance. To that we must add the cost of operations and maintenance of such structures, the annual cost of operation and maintenance. The benefits, of course, are taken as an average based on experience over a period of years. So that we wind up then with in one hand an annual cost average, annual cost, and in the other the average annual benefits. Now it is the policy of the Corps of Engineers that the benefits must be greater than the cost in order to recommend a project as favorably, as economically feasible. Now when we considered for this proposal and compared the benefits and

costs we found out this ratio. Benefits to the east for the Fox Point Barrier are three point six, for the Lower Bay Barrier two point zero. Or over-all for the entire plan the benefits which would accrue, in our opinion based on our study, would be more than two times or double the cost of the project.

Now as I mentioned before, the first hearing on this proposal was held in Providence last night, and at that time representatives, members, rather, of Congress from the State of Rhode Island, State Officials, were heard and presented statements on this project.

Tonight I propose to conduct the hearing in the same order, and if there are any members of Congress present who wish to be heard, I would be pleased to recognize him at this time.

Is there any member of Congress present who wishes to be heard at this time? Apparently there is none tonight.

Is there any State Officials who wish to be heard at this time?

Mr. Ise has the floor.

MR. HENRY ISE: Colonel, I appeared at the hearing last night in Providence, and my position on this subject is now a part of the record. I don't wish to speak further tonight.

LT. COLONEL WASHINGTON: Thank you, Mr. Ise.

Is there any other State Official who wishes to be heard at this time?

(No response.)

Apparently there is none.

Now is there any, first of all, any City Official of the City of Newport who wishes to be heard at this time in favor of the proposed hurricane project?

MR. GEORGE W. LAUTON: Yes, sir. My name is George W. Lauton. I am Councilman of the City of Newport and Vice-chairman of the Council, and taking the place of Mayor John J. Sullivan tonight. Also our City Manager, Mr. Beck, Irving H. Beck, who couldn't be here tonight, and he wanted to be heard, so he has made a statement for the City of Newport.

(The following prepared statement submitted by Mr. George W. Lauton, was read into the record, and is marked Exhibit Number Two.)

STATEMENT PRESENTED AT PUBLIC HEARING ON HURRICANE PROTECTION FOR NARRAGANSETT BAY, RHODE ISLAND AND MASSACHUSETTS, OCTOBER 2, 1956, AT GRANSTON-CLAYTON SCHOOL AUDITORIUM, NEWPORT, RHODE ISLAND.

The City of Newport is appreciative of the untiring efforts of the U. S. Army Engineers in their desire to minimize hurricane damage to the coastal and tidal areas of this region, and more specifically of the Narragansett Bay area.

As evidenced by the representation here this evening, we in the City of Newport not only have a great interest in this proposed development, but also a great stake. The disastrous effects of the last several hurricanes have left an indelible impression on the minds of the people here of the necessity to eliminate this wasteful destruction of lives and property.

In addition to the study that has been given this project by

local citizens, the Waterfront Commission, which is an advisory commission appointed by Mayor John J. Sullivan, the City Engineer, the Planning Board, and other agencies of the city government, have given this matter careful consideration.

Councilman George W. Lorton is here tonight representing Mayor John J. Sullivan who is unable to attend, and the City Council. As a general policy, all groups are in accord with the objectives of the plan whereby there will be an upper bay barrier at Fox Point and a lower bay barrier near Bull Point, a West Barrier below Jamestown Bridge, and the Sakonnet River Barrier.

This here has nothing objectional, but it would just like to have a few questions answered. So if it is alright, I will go on and read this from the City Manager.

MR. COLONEL WASHINGTON: Please proceed.

MR. LORTON: This plan would unquestionably minimize the effects of high tides upon those low level areas in Newport that were flooded before. This proposed program would also minimize the effects of flood water in Brenton Cove, King Park, and the whole inner harbor, including Long Wharf.

We wish to be constructive in our approach to this problem, the need for which is unquestionable. However, in future planning, we would like to suggest that consideration be given to several questions, the answers to which directly effect Newport.

1. Newport Harbor has always been recognized as a magnificent land-locked harbor, with unobstructed access to the sea and port

facilities which have aided in the early development of Newport's shipping. This excellent harbor serves the great Naval establishments, and is also known for its international reputation as a base for ocean yacht racing.

Our question is, would the opening in the barrier, as now planned, be adequate to provide for any future development of our harbor facilities, and would it be adequate for existing users? Would a thousand foot opening in the barrier hamper the volume of traffic through this passage, and would it discourage yachtsmen from using Newport Harbor? Will this also increase the bay current to the point where it will interfere with easy navigation?

2. Would the barrier in the harbor have any effect on the possible backing up of flood waters on the areas adjacent to the outer harbor, in the vicinity of Ocean Avenue?

3. Would this barrier have any adverse effect upon the fishing industry which now operates from our harbor?

(Signed) Irving H. Beck

City Manager

(End of reading.)

LT. COLONEL WASHINGTON: Thank you very much Mr. Lawton. I note your questions, and if there are any further comments on them during the, during the hearing, if not we will have some comments on these questions before the hearing is concluded.

Is there any other representative of the City of Newport who wishes to be heard at this time? I recognize this gentleman.

MR. W. J. TIERNAN: My name is W. J. Tiernan. I am councilman of the City of Newport. I am in the real estate business, and I am a retired officer in the Navy. And I speak with those three different perspectives in mind.

I will have some questions, of course, because I am not here as a demonstrator or a proponent, but in my capacity as Naval Officer I have navigated in and out of the Narragansett Bay for years. And I can assure you, gentlemen and ladies, that under certain weather conditions, it is a tough enough job to get in and out of the harbor with the natural coast line we have. What the proposed construction will do will remain to be seen. Therefore, I have no prepared talk here, but I am going to ask the engineers if they have a body of water geographically similar to Narragansett Bay where a construction like this has been installed and tried or is this the first time anything like that is about to be tried? I know from what I have read in the papers that the opening that the Corps of Engineers propose and the depth is not satisfactory to the Navy needs.

Despite the pros and cons about Naval activities here in Narragansett Bay for longer than I have been associated with the Navy, which is pretty nearly forty years, has been one of our strategic bases in the United States. Its importance increases as time goes on with Quonset and other Naval activities here and which we economically or otherwise chose or did not choose to accept the condition, what are we doing to our national security? Access and egress from harbors is the most important thing in all Naval shipping, not to mention the

commercial shipping which I am not in a position to talk about, because I don't know the figures.

Now anybody in their right mind would be most in favor of doing anything that would minimize the damage that we have seen here from hurricanes. I personally have been here through the four hurricanes that Newport has experienced.

I was executive officer of the Torpedo Station in 1944, when we had the hurricane. As you recall, that hurricane happened at dead low water. Yet, I walked around the Island in the height of the hurricane and about a foot of water above my boots on the Island, meaning that the water was then about fourteen or fifteen feet above what it would have been. Now this Barrier, I understand, is twenty or twenty-two feet. How could it stop the waters from coming over that Barrier? Because I saw the records and pictures of the water going over the Stone Bridge, well over the Bridge and up over the controls tower.

This opening would also, even if the other conditions were equal, would I think, act as a funnel. It will increase the tide and currents over what they are now, and in foggy weather making navigational hazards increased.

I think, therefore - - - And I am only here for this purpose. I am not here representing the City of Newport. I am here as an individual, although I am a Councilman, to see that before we get over enthusiastic about the expenditure of upwards of a hundred million dollars for a so-called Barrier, let's decide what we are making a barrier against.

I think if there is no record that a similar construction has been erected and proved officially, we would be very, we must be very wary and cautious about what we do or what we authorize or request be done. This is an election year, and you can get a lot of promises. I recognize that, but we better be careful about what we are asking for less we be hurting our own personal benefits as well as those of the country.

LT. COLONEL WASHINGTON: Thank you.

I didn't get your name, sir.

MR. TIERNAN: Tiernan, Captain Tiernan.

LT. COLONEL WASHINGTON: Is there any other official of the City of Newport who wishes to be heard in favor of the proposal?

You have the floor Mr. O'Brien.

MR. JAMES S. O'BRIEN: Colonel, I would like to take this opportunity personally to thank you and the Corps of Engineers for your efforts on behalf of the people of the City of Newport and certainly the people of Narragansett Bay.

I am speaking as a citizen of Newport, not as Councilman. I think the City Manager has expressed himself admirably in that point. But, as a citizen who has witnessed hurricanes in Newport in 1938, 1944 and 1954, I certainly feel that it is high time something was done to alleviate the conditions of those hurricanes. I feel that the Corps of Engineers is doing it by their presence here tonight.

As a Councilman for the First Ward, which has one of the most beautiful residential sections of the City of Newport fronting on the

inner harbor has suffered grievous damage during the last hurricane. I feel that their presence here tonight is to the interest of the City of Newport.

As Captain Tiernan pointed out -- He being a Naval Officer can realize the impact on navigation. I was only a Seaman in the Navy. I can't speak on navigating ships in and out of Newport, but I can speak for the people who live here. And certainly it is to their benefit that something be done to protect the coastal areas of the City of Newport.

There is no question but that the Federal Government in connection with the State of Rhode Island, and the City of Newport, and Providence, can afford the money.

I believe the cost of the Newport crossing from Jamestown to Fort Adams approxiantely was fifteen or sixteen million dollars, estimated. I would have one question on that, Colonel. I don't want to be a pig, in that your giving us here something for practically nothing, but I would like to ask a question. The City of Newport has always been desirous of a Bay crossing. Now you are planning a fine structure there. I was just wondering if there is any possibility of a bridge to Jamestown going over that. I am not putting that in here tonight, but just a possibility. If you are investing sixteen million dollars, I certainly would like to see some possibility of a bridge.

But in closing, I want to thank the Corps of Engineers. I hope that this comes about. I think it will benefit the City, the entire area of Narragansett Bay, the State of Rhode Island and the

State of Massachusetts.

Thank you very much, Colonel.

MR. COLONEL WACHENDORF: Thank you, Mr. O'Brien.

Is there any other official of the City of Newport who wishes to be heard in favor of the proposal?

(No response.)

I have a brief here from the Town of Portsmouth. Is there a representative of the Town of Portsmouth who wishes to be heard at this time?

I recognize this gentleman.

MR. HENRY J. ETHIER: Thank you Colonel.

Ladies and gentlemen - -

MR. COLONEL WACHENDORF: Excuse me, sir, state your name.

MR. ETHIER: My name is Henry Ethier, and I am Chairman of the Portsmouth Town Council.

Ladies and gentlemen: I am "tickled to death" to be here, to hear some discussion concerning hurricanes. I unfortunately probably saw everything in four hurricanes and know what a hurricane is. I probably know how bad a hurricane is probably as well as anybody who sits in this hall, because of the fact that I have participated in these hurricanes, at the height of them.

I know how people suffer, and I know the damages that occur from hurricanes. I know the after-effects, so I am quite happy to see the Army Corps of Engineers coming up with plans, such as the plan they have here, to do something for the people who are living in the

areas that are effected by hurricanes, such as Newport County.

(The following prepared statement submitted by Mr. Henry J. Stahler, a portion of which was read into the record, is marked Exhibit Number Three.)

October 2, 1956

Corps of Engineers, U. S. Army
Office of the Division Engineer
New England Division
150 Causeway Street
Boston 14, Massachusetts

Attention - Robert J. Fleming, Jr.

Brigadier General, U. S. Army
Division Engineer

Reference: File No. MEDDA, Letter dated 14 September 1956 pertaining to examination and survey of the coastal and tidal areas of the northeastern United States, particular reference to areas where severe damages have occurred, including the Narragansett Bay Area.

The Town Council of the Town of Portsmouth, Rhode Island, has directed that a written statement be filed supporting oral statements to be made by its representatives appearing before a public hearing scheduled for October 2, 1956, at Newport, Rhode Island.

The said Town Council unequivocally supports Plan No. 2 as set forth in your letter captioned "(2) Lower Bay Barriers". It is the opinion of the said Town Council that plan No. 1 which proposes

only one barrier would afford protection to a relatively small segment of the Bay area, whereas Plan No. 2 which proposes three barriers would afford protection for a much greater segment of the Bay area, which would include the safety of a greater proportion of the State's population and a greater proportion of the property of its people.

The said Town Council is particularly interested in the relationship of the proposed Plan No. 2 and the Town of Portsmouth itself. In the past, hurricanes with their accompanying tidal waters and high winds have left in their wake, in the Town of Portsmouth, death, serious property losses, dangerous public health conditions and especially marked erosion of property.

In Portsmouth in 1938, tidal waters were the cause wherein twenty-nine (29) people were killed, approximately \$250,000.00 worth of property was completely destroyed, utilities were not restored for almost sixty days, a serious health situation persisted for almost one year following the storm wherein all drinking water had to be carted into the Island Park area, and in several large water front areas twenty feet or so of property was lost by erosion. Fortunately, the hurricane of 1944 did not disrupt services or cause any loss of life. Property loss was light.

We have attached to the statement we hand you, some figures to verify these figures to show that public health was endangered.

The series of hurricanes in 1954 was of serious consequence. Tidal waters caused one death, \$450,000.00 worth of property was destroyed. (See attached statement of Tax Assessors.) Utilities were

disrupted for thirty (30) days or so. Public Health was endangered. (See attached statement of Health Officer.) Municipal property was destroyed. Roads and roadbeds were damaged. (See attached statement filed in conjunction with PLS75 applications 1 and 2.) The personal safety of fifteen hundred people in the Island Park area was in real jeopardy and had tidal waters risen five feet more, the loss of life would have been tragically high for there was no escape route left open. Further erosion occurred along all shore areas. The Town of Portsmouth spent over thirty-five thousand dollars to restore its municipal facilities and property, of which sum, the Federal Government reimbursed the Town of Portsmouth, under the terms of PLS75, a sum in excess of \$21,800.00.

I would like to say here and now that it doesn't take a hurricane but just a real high tide to get that Island Park section.

Until such time as the tidal waters resulting from hurricanes or severe storms can be checked, the Town of Portsmouth is confronted with these ever present serious problems. It is the opinion of the said Town Council that the erection of the barriers proposed in Plan No 2 would minimize the effect of rising waters, for the waters would be kept away from vulnerable areas of the Town.

The situation concerning the safety of the Island Park residents will become more critical after the Stone Bridge is removed. When tidal waters begin to rise, escape to the westward to high ground is blocked for sections of Park Avenue become inundated early. Stone bridge offered a way of escape for a little time thereafter. The

Stone Bridge will be demolished within six months for the new Sakonnet River Bridge has been completed and has been opened to traffic.

It is the sincere hope of the said Town Council that the Division Engineer will endorse and support Plan No. 2, and recommend its adoption. The said Town Council is aware of the multitude of problems that must be reconciled before any action can be finalized, but in the final analysis, the said Town Council respectfully urges the adoption of Plan No. 2 for it would afford the greatest protection to some area within the State and of the Town of Portsmouth especially.

TOWN COUNCIL OF THE TOWN OF

PORTSMOUTH, RHODE ISLAND

(Signed)

Henry J. Ethier

President

(End of portion of report that was read.)

"Exhibit W"

Prudence Island is situated in Narragansett Bay, a part of the Town of Portsmouth, Rhode Island. The only means of physical access and egress to and from the island is by boat. A ferry runs to the island from the Town of Bristol and by means of this ferry, all freight and materials reach the island. Prior to hurricane Carol, 31 August 1954, the ferry utilized the dock at Sandy Point, onto which freight could be unloaded and trucked away. Hurricane Carol destroyed this dock completely and presently, Prudence Island has no dock capable of handling freight. A makeshift dock at Homestead which was temporarily repaired following the hurricane is now being used, but it is

only eighteen feet or so wide and very insecure. The Homestead dock is exposed and cannot be utilized during the winter months due to the prevailing northerly winds and the ice which forms in the Bay. The only protected anchorage on Prudence Island is to the south and lee of Sandy Point and due to the protection of the sand bar and the ebbing tides, ice does not form in the anchorage and the prevailing winds do not affect the anchorage. The dock at Sandy Point was used by the residents not only as the ferry landing but as a facility for shellfishermen in stormy weather. This dock was the only means for bulk hauling (fuel, provisions, materials, etc.) and large craft. This facility, if replaced, will not be temporary in nature, but a permanent structure. It is a unique situation and favorable consideration of this application is respectfully requested due to the seriousness of the situation that exists and the hardships under which the residents of Prudence Island must operate. The Town of Portsmouth has no funds whatsoever at this time to replace this facility, but if the pilings could be supplied and driven along with the materials for the superstructure, the Prudence Island citizens would provide the labor for its erection.

1. Protective Work and Debris Clearance.

Hurricane Carol, 31 August 1954, devastated shore areas of the Island Park, Portsmouth Park, West Shore and Cotton Fence Point Sections of the Town of Portsmouth proper and shore areas of Prudence Island, a part of the Town of Portsmouth. As a result of the wind-driven waters, buildings were smashed, moved off their foundations and

debris was littered over highways and other property within the area reached by these waters. Hundreds of sixty buildings were demolished and lumber, furniture, automobiles and household goods were strewn over the entire area affected. Immediate removal of debris on a temporary basis was necessary so that emergency vehicles could use the highways in the stricken area. In several instances, buildings were swept off their foundations and stopped intact in the middle of streets, blocking the flow of traffic. Two hundred trees were felled within the town on highways, and their removal is necessary. Accompanying photographs will indicate the concentration of debris in the shore areas.

2. Health and Sanitation Emergency Measures.

There is no water system in Portsmouth. Each householder must make provisions of his own water supply and this is accomplished by spears or sinking wells. These sources of water within the areas inundated by the salt water were adversely affected for the salt water filled the wells and saturated the earth so thoroughly that the water will not be potable for at least twelve months. Therefore the Town must maintain a supply of potable water within the affected areas by trucking in the same in tanks mounted on trucks. This service must be provided for at least twelve months.

3. Street Department - Emergency Repairs.

All streets listed in "Exhibit "A" were damaged in part by losing roadbed and pavement which was washed away. Fountain Avenue, Bohannet Boulevard, Power Street and Riverside and Morgan Streets are

all in the Island Park area save Power Street which is further south in the Town. The high waters caused depressions and washing the roadbeds away. Fill to bring these streets back to grade will provide emergency repairs. Narragansett Road, Prudence Island, runs along the eastern shore of the island and is the main thoroughfare running north and south. Hurricane driven waters have undermined the supporting bank of this road in places and fill will be required to preserve what is left of the road which in places has been narrowed to one way passage. The highway supervisor on Prudence Island has assured the Town Council that the emergency repairs in carting fill will be completed as economically as possible.

4. Police Department.

Our Police Department consists of four regular full time men. It was necessary to augment our regular force with extra personnel to handle traffic and protect the property of those whose homes had been swept away and destroyed until the rightful owners could reclaim and salvage the same. These extra men were required in addition to the National Guard, Naval Shore Patrol and Rhode Island State Police personnel assigned to the area.

5. Fire Department.

Our Fire Department consists of four regular full time men. In addition to fire-fighting duties, Fire Department personnel operate the ambulance service. Extra men were required to maintain extra ambulances and to pump out cellars and walls which were flooded. In addition, the Fire Department had to maintain fire patrols in the shore

area in conjunction with the police inasmuch as communications were not operative and constant patrol had to be maintained until telephone service was restored.

TAX ASSESSOR'S DEPARTMENT

PORTSMOUTH, R. I.

October 2, 1956

TO WHOM IT MAY CONCERN:

During the Hurricane of 1954 the Town of Portsmouth lost between \$110,000. and \$125,000. in assessed valuation which represents approximately less than one-third of the actual valuation. This would run around \$450,000. and covers the buildings that were destroyed by the hurricane.

We made no allowance for the erosion which was quite extensive.

(Signed) Eunice Gallagher

Clerk, Board of Assessors

JOHN M. MALONE, M. D.

101 WATER STREET

PORTSMOUTH, R. I.

October 1, 1956

Portsmouth Town Council

Portsmouth, Rhode Island

Gentlemen:

There has been extensive flooding of the Island Park Section of Portsmouth with the high flood tides associated with hurricanes.

This has created an extreme hazard to health because of the fact that the drinking water is obtained by shallow driven spikes to twenty feet into the sandy soil, the same soil into which each house dumps its human sewage. The houses there are extremely close together as you know. The risk of a water-borne epidemic, therefore, is of course high even without flooding but certainly would be most likely with flooding conditions.

A water system will be helpful and this is in the making. A sewage system would further diminish the risk as would any corrective measures to diminish flooding.

Sincerely yours,

(Signed) John E. Malone, E. D.

(End of Exhibit Number Three.)

LT. COLONEL WACHENDORF: Thank you, sir.

Is there any other City Official of the Town of Portsmouth who wishes to be heard in favor of the proposal?

(No response.)

Any City Official of the Town of Jamestown who wishes to be heard at this time in favor of the proposal?

(No response.)

Any officials of the Towns of Bristol, Barrington or Warren, who wish to be heard in favor of the proposal?

MR. FRANCIS J. MURPHY: General Fleming, Mr. Kropfer and Mr. McAleer: My name is Francis J. Murphy, and I am a member of the Bristol Harbor Development Commission, and Chairman of the sub-committee

on hurricane protection.

I have been delegated by the Bristol Commission to read our report. And our Commission has been delegated by the Bristol Town Council to present our report here tonight.

First, we most heartily wish to express our admiration and appreciation for the fine work that the Corps of Engineers has done in the past years, and for the fine cooperation that we have always received when we called upon them for advice in line with hurricane work.

We definitely are in favor of the recommendations as presented by the Corps of Engineers, namely the Lower Bay project at Jamestown, Newport and the Portsmouth project at Island Park, and also the one at Fox Point, but we wish to -- in our reports that I will read -- request an amendment be made to that report so as to take care of a local condition that we are wide open to, as you can well see, by looking at the map.

We, in the Commission, aren't engineers and we had no funds, which is typical of Governmental Agencies, to hire any engineers to prepare this report, but we do know what damage did occur. We do know how it happened. And I certainly am sure we know what damage could happen in the future with future hurricanes and high water.

Our concern for local protection in addition to the Lower Bay project received support, according to today's newspapers, from Governor Roberts, Congressman Forand, and Fogarty, and Mr. Isa¹, who is here this evening, and also in the report that was submitted to the

Governor by the Hurricane Survey Advisory Commission. In fact, this report recommends local protection be studied in addition to the Lower Bay project.

In our written report, that I am going to read, and we are submitting here, -- we have ample copies for you -- you will notice photographs showing wave heights. You will notice letters, a section of chart 287, showing some proposed barrier locations, and we note what our problems are, and we feel that the Corps of Engineers has the ability and the know how to cope with them.

The statement which I will leave with this, at this hearing is as follows:

(The following prepared statement submitted by Mr. Francis J. Murphy was read into the record, and is marked Exhibit Number Four.)

STATEMENT OF BRISTOL HARBOR DEVELOPMENT

COMMISSION

STATEMENT TO U. S. ARMY CORPS OF ENGINEERS
PUBLIC HEARING, OCTOBER 2, 1956

This is a request for an amendment to the report of the United States Army Corps of Engineers on hurricane protection in Narragansett Bay, which is to be presented to the next session of Congress. It restates the pleas made by this Commission at a public hearing of the N.Y. - N.E.I.A.C. in December, 1954 and at a hearing before the Senate Subcommittee on Flood Control in April, 1955.

The request is made in view of the Corps of Engineers' findings

that Bristol suffered the second largest amount of damage of communities on Narragansett Bay. Approximately \$2,900,000 damage occurred in Bristol on August 31, 1954, and about eighty-five per cent of this damage was in the builtup sector of the town's waterfront.

This commission feels that a lower bay barrier will help our flood problem. We are concerned however, over the potential damage from waves, even in the event of a barrier at Newport. The physical makeup of the waterfront is such that only a few feet of flood water, combined with hurricane-driven waves, is sufficient to knock out a large portion of our vital industry, make useless the Coast Guard facilities located in Bristol, bring substantial damage to the commercial fishing interests, render the freight service to Bristol a serious blow and otherwise damage real estate, commercial interests and pleasure boating.

According to data compiled by the Corps of Engineers, wave action in Narragansett Bay is highest at the northern ends of the east and west passages. This is a fact whether or not the lower bay barriers are built. Bristol Harbor lies directly at the northern end of the east passage, laying it open to a fourteen mile span of sea to the south. It has been our experience during the hurricanes of 1938 and 1954 that the wind is at its peak while in the southeast, south and southwest. An enclosed aerial photo attests to this extreme exposure from Newport to Bristol.

INDUSTRY:

The nature of our industries along the waterfront opens them

to damage at tides not such over a moon tide. The plants were originally constructed close to the harbor to take advantage of the channel when most shipping was done by water. Although that situation has changed drastically in the past fifty years, the plants have remained and have been enlarged. At present almost fifty per cent of our industry is on the waterfront.

The experience here in 1938 and 1954 was that the vital parts of the plants were almost completely destroyed by hurricane waves. The power plants were knocked out, keeping hundreds of people out of work for much longer periods of time than is normal. This condition has not changed, because it is virtually impossible for power plants to be moved around within the mills, or for dikes to be built around them which would withstand the wave action of a hurricane. Therefore, we can assume that if a storm of the magnitude of 1954 or 1938 were to hit Bristol in the future, the same situation would occur.

RAILROAD:

As an important phase of our local industries, the New York, New Haven and Hartford Railroad track which runs along the waterfront also is vulnerable to wave action. Large sections of the track were hammered by waves in 1954 and 1938, necessitating a long delay in shipping and a costly repair job for the railroad. This delay reacted upon the ability of local plants to maintain production, and employees to continue work in plants far removed from the waterfront.

The ability of the railroad to deliver goods has figured prominently in the town's search for industry, while the safety of

plants on the waterfront has in one case definitely cancelled the plans of a manufacturer in locating in Bristol.

COMMERCIAL FISHERIES:

The largest single source of employment on the waterfront is the commercial shellfish business, which is reported to gross over \$500,000 per year in fish alone. There are many businesses in the town which directly benefit from the industry. Most of the shellfish are processed either by a national manufacturer of chowder, or are shipped to New York markets. The industry has become very stable in the past five years, and continues to constitute a valuable reservoir of jobs for unemployed residents of Bristol.

In 1954 the industry was badly hurt by loss of boats, gear and in one case an entire wholesale processing plant. Representatives of the industry have repeatedly stated that a breakwater in Bristol Harbor is the only type of protection which would have averted the damage received in 1954. They also maintain that a breakwater would be of great value during the usual southerly storms, when the fleet is subject to damage because of the exposed moorings on the waterfront.

Several lobstermen also operate out of Bristol, and received damage in 1954. One lobster boat was completely destroyed, while others were seriously damaged.

FEDERAL, STATE AND TOWN PROPERTY:

The United States Coast Guard Depot in Bristol, out of which three boats operate, is vital to the safety of Narragansett Bay. The Depot is exposed to the south, and even during average storms has been

abandoned because of wave conditions. If a lower bay barrier is constructed in the east passage, it will cut off the Castle Hill Coast Guard Station from all of Narragansett Bay, leaving the Bristol Depot the only Coast Guard base in the Bay. In case of an emergency created by either a hurricane or other storm, the Bristol Depot should be in operational order.

The State of Rhode Island is presently converting its armory and pier on the waterfront into a state pier for commercial and pleasure use. This facility will also be used by the fish and game patrol of middle bay shellfish grounds. The utility of this pier will depend upon the protection it receives during storms.

The town has appropriated \$37,000 to purchase waterfront property and create facilities for both commercial and sports fishermen. This property will grow in value as time passes, and will also depend upon protection from storm waves.

REFUGE:

A breakwater would create a refuge for commercial and pleasure boats of Narragansett Bay. This body of water, with the exception of a few scattered harbors, offers no such protection under hurricane conditions. The harbor is located in the geographical center of the bay and it would be easily accessible in case of storms.

CONCLUSION:

Because the economic well being of the town is directly and indirectly tied to the waterfront, we feel that the future development of the town is keyed to the action the Corps of Engineers and Congress

take toward hurricane protection. We endorse a lower bay barrier, but join in the concern which Providence shows over local flood and wave damage protection.

It is evident that the Corps of Engineers must agree in principle to local protection in that it recommended the Fox Point Barrier in addition to the Lower Barriers. Our request that the study be amended to include breakwaters in Bristol Harbor seeks protection of the economic growth of our community. We hope that it will not be hampered in the future as it has been in the past two decades. There is little question that if both the flood and wave action of future hurricanes is held to a minimum, the cost of such protection will be justified.

We urgently plea that the Corps of Engineers and Congress consider not only the dollar value of hurricane damage, but also the incalculable threat to human life, health and the productivity of the Town of Bristol.

(End of reading.)

(The following letters and statements submitted by Mr. Francis J. Murphy, attached to his report, were not read into the record.)

RESOLUTION ON HURRICANE PROTECTION
OF BRISTOL, RHODE ISLAND

WHEREAS, the hurricane protection survey by the United States Army Corps of Engineers, which has just been completed, does not provide for protection of Bristol Harbor from wave action, and

WHEREAS, the waterfront resources of this town include a

shellfish industry which gainfully employs many of our citizens; a sizeable amount of heavy industry which is vulnerable to wave damage; and a fleet of pleasure boats worth a considerable sum, and

WHEREAS, The Coast Guard Depot in Bristol is the only such facility in Narragansett Bay which is available for hurricane emergencies,

THEREFORE, BE IT RESOLVED, that the United States Army Corps of Engineers be asked to amend their report on hurricane protection of Narragansett Bay to include breakwater protection of Bristol Harbor, and that a copy of this resolution be sent to the Governor of Rhode Island and the members of Congress from Rhode Island, and the members of the committees of Congress which are concerned with hurricane protection of Narragansett Bay.

Adopted by the Town Council of the Town of Bristol September 19, 1956.

(End of resolution.)

UNITED STATES COAST GUARD

Commander, 1st CG District

1100 Custom House

Boston 9, Massachusetts

28 September, 1956

Mr. Roswell S. Rosworth, Jr.

Chairman, Harbor Development Commission

c/o Bristol Phoenix

Bristol, Rhode Island

Dear Mr. Rosworth:

This will acknowledge your letter of September 17, 1956, regarding Coast Guard views in connection with hurricane protection at Bristol, Rhode Island.

It is understood a recommendation will be made by the Bristol Harbor Development Commission that breakwaters for Bristol Harbor, be included in the Corps of Engineers report to the next session of Congress. The Establishment of a suitable breakwater at Bristol would materially benefit the Coast Guard in protecting its property at that location. While the capital investment represented by the Coast Guard Depot at Bristol is relatively small its importance is calculated on its mission of providing support for Coast Guard activities which become especially important during storm conditions.

It should be clearly understood that the breakwater being proposed could not be justified solely on the basis that the Coast Guard would primarily benefit. However, the interest of the Coast Guard shared with other waterfront activities is believed sufficiently substantial to permit favorable endorsement of the proposed recommendation.

This letter may be forwarded as appropriate to the Corps of Engineers as evidence of Coast Guard views.

Very truly yours,

(Signed)

R. M. Ross

Captain, U. S. Coast Guard

Chief of Staff, First Coast Guard District

(End of letter.)

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF AGRICULTURE AND CONSERVATION

83 Park Street

Providence 2, Rhode Island

October 2, 1956

Division Engineer

United States Army Corps of Engineers

150 Causeway Street

Dorchester, Massachusetts

Dear Sir:

The Rhode Island Department of Agriculture and Conservation is concerned with the safety of the commercial craft that normally use Bristol Harbor for an anchorage or berth.

During the past few years, this harbor has increased in importance, particularly as it pertains to the licensed shellfishermen of the eastern part of our State.

It is our thought that in the future, this harbor will berth a greater number of commercial fishermen. We desire to go on record as being in favor of the necessity of some form of breakwater in Bristol Harbor which would afford protection for the commercial fishermen, and naturally, also for the pleasure craft that patronize this location.

This department is officially initiating the site of a public boat launching area, and we are also planning certain repairs to the former Armory Deck which will be used by both commercial fishermen and

pleasure boat operators of this area.

We hope you will find it possible to include in your recommendations to Congress on hurricane protection of Narragansett Bay some form of breakwater which would afford protection to the Bristol facilities.

Very truly yours,

(Signed) John L. Rego, Director

Agriculture and Conservation

cc: Town Clerk, Bristol, Rhode Island

(End of letter.)

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

DEPARTMENT OF PUBLIC WORKS

DIVISION OF HARBORS AND RIVERS

216 STATE OFFICE BUILDING

PROVIDENCE 3, RHODE ISLAND

September 21, 1956

The Honorable Dennis J. Roberts
Governor of the State of Rhode Island
State House
Providence, Rhode Island

My Dear Governor:

At an executive meeting held at the State House on Tuesday evening, September 18, immediately after its fourth general meeting, the Rhode Island Hurricane Survey Advisory Committee voted to inform the Corps of Engineers, U. S. Army, through General Robert J. Fleming, Jr.

Division Engineer, at Boston, Massachusetts, that the committee is in favor of the following:

- (a) The construction of a hurricane barrier at the entrance to Narragansett Bay and a dam at Fox Point.
- (b) The committee urge the Corps of Engineers to consider providing local protection against wave-action damage which will occur in certain critical areas of the bay even though hurricane barriers are constructed as suggested above.
- (c) That the Corps of Engineers should continue and bring to an early conclusion the studies now being made to ascertain the effects construction of a lower bay barrier and the resulting change in tidal ranges may have on fish and wildlife, on pollution, on navigation, and on certain shorefront properties.
- (d) Because of the general character of the proposed barriers and the widespread benefits which would be derived from them, the committee feels that the proposed hurricane projects should be considered eligible for Federal government financing.

Respectfully yours,

(Signed) Henry Ice¹, Chief

Division of Harbors and Rivers

Chairman, R. I. Hurricane Survey Advisory
Committee

OFFICE OF THE HARBORMASTER

BRISTOL, RHODE ISLAND

September 27, 1956

U. S. Army Corps of Engineers

Boston, Mass.

Gentlemen:

As Harbormaster of Bristol, Rhode Island, for several decades, I have had an opportunity to view the action of storms of all types in Bristol Harbor. I was present during the hurricanes of September 21, 1938 and August 21, 1954.

I feel that the only possible means of protection of boating on the harbor and property located close to the high tide level is a breakwater.

It is obvious that the industries located near the water, the Coast Guard Depot, the town and state docking facilities, or the shellfish businesses cannot move away from the waterfront. Their existence is tied directly to the fact that the harbor is located here.

Although the primary value of a breakwater is during hurricanes, it cannot be forgotten that it would serve a good purpose during any type of storm. I feel strongly that the erection of a breakwater will bring about an immediate economic benefit to the Marine industries here and urge your consideration of the proposal.

Very truly yours,

(Signed) Samuel S. Wardwell

HARBORMASTER

CIVIC INDUSTRIES COMMITTEE

P. O. BOX 261

BRISTOL, RHODE ISLAND

September 27, 1956

Dr. Francis J. Murphy

Chairman, Subcommittee

Hurricane Protection

Bristol Harbor Commission

Bristol, Rhode Island.

Dear Mr. Murphy:

As a spokesman for the Bristol Civic Industries Committee I am strongly in favor of wave protection barriers in Bristol Harbor in addition to the Lower Bay Barrier.

Many of our industries, some of our future plant sites, and our best available plant space are located close to the waterfront and are subject to potential wave damage in addition to high water damage.

It is well known that the former Collins and Allman mill located on Thames Street received considerable damage in the 1954 hurricane, a good part of which can be attributed to wave action. This building is now owned by the Bristol Development Company and they, with the cooperation of the Civic Industries Committee are trying to rent space to new industries for Bristol which are needed to alleviate the unemployment problem. The construction of wave protection barriers would make the lower floors of this building much more attractive to potential tenants.

Bristol's only railroad line runs close to the waterfront and terminates at the edge of the harbor. It is essential to the industry of Bristol that this line be protected from water damage. It should also be pointed out that the only plant sites in Bristol adjacent to this rail line are also on the water's edge. These sites are eliminated from consideration for plant construction until such time as suitable water barriers can be constructed to insure protection.

With the above considerations in mind, we urgently request that the construction of wave barriers in Bristol Harbor be included in Bay protection plans.

Yours truly,

(Signed) S. Ricklin, Consultant

(Use of letter.)

HERRESHOFF YACHT YARD, INC.

165 HOPE STREET

BRISTOL, RHODE ISLAND

September 20, 1956

Harbor Development Commission

Bristol, Rhode Island

Gentlemen:

We have studied the recommendations of the U. S. Army Corps of Engineers pertaining to hurricane protection in Narragansett Bay and find the conclusions vague in relation to what will be done to protect the commercial interests along the Town's waterfront.

As a Shipyard currently building Government boats, and the

site of the building of one hundred ships during World War II, we feel that a serious omission has been made in the plans as presented. We see no provision for protection from wave damage - the worst part of hurricanes in recent years.

As a Board which has represented the Town in the matter of hurricane protection, may we ask that you urge the engineers to re-consider some type of definite aid for Bristol Harbor.

Very truly yours,

Herreshoff Yacht Yard, Inc.

(Signed) Harry Town, President

(End of letter.)

BRISTOL YACHT CLUB

BRISTOL, RHODE ISLAND

September 21, 1956

Bristol Harbor Development Commission

Bristol, Rhode Island

Gentlemen:

It is my understanding that your committee has been active in helping the town to secure hurricane protection. In regard to this,

I have noticed recently that the Army Corps of Engineers has made a report on hurricane protection and has omitted any aid for Bristol Harbor.

We have a fleet of boats anchored at the Bristol Yacht Club, which is worth a good portion of a million dollars. This fleet represents many jobs for local people, in boat yards, stores and other

businessmen. We feel that such a sizeable phase of the town's economy needs protection and are shocked that the engineers report contains no recommendations in this direction.

We urge you to contact our members of Congress and in the strongest possible language, ask their cooperation in behalf of better federal consideration.

Very truly yours,

(Signed) C. Paul Brune, U. S. D.

Comodore

(End of letter.)

HOWEY THOMAS FREEMAN

POST OFFICE BOX 1165

PROVIDENCE 1, RHODE ISLAND

September 28, 1956

Mr. Francis J. Murphy, Chairman
 Subcommittee Hurricane Protection
 Bristol Harbor Commission,
 Harbor Development Commission
 Bristol, Rhode Island

Dear Mr. Murphy:

I am in receipt of your letter of September 25th and am planning to attend the meeting in Providence to be held October 1st and do not expect to attend the meeting to be held in Newport on October 2nd.

However, I would like the following statement made a part of

the record:

I am a summer resident of the Town of Bristol, owning property at the southerly end of Popponesset Point in said town. This Point has been severely damaged by the hurricane of 1938 and those that have followed. In total I have lost almost sixty feet of land at the end of the Point and over thirty feet on the east and west sides of the Point.

I have also on three occasions lost my dock which is two hundred fifty feet long and which last time cost over twelve thousand dollars to repair. I have also lost several boats and trees too numerous to mention.

I am heartily in favor of a barrier at the entrance of Narragansett Bay. While it will not eliminate damage from future storms, it should reduce the damage that these storms cause.

Respectfully submitted,

(Signed) Hovey T. Freeman

(End of letter.)

BRISTOL CHAMBER OF COMMERCE

BRISTOL, RHODE ISLAND

September 28, 1956

Bristol Harbor Commission

Bristol, Rhode Island

Dear Sirs:

Please be advised that at the Thursday, September 20 meeting of the Bristol Chamber of Commerce the following resolution was unani-

unanimously adopted:

"That the Chamber of Commerce of Bristol urgently appeal to the United States Army Corps of Engineers, in behalf of businesses located on the Bristol waterfront, to include in the current hurricane survey of Narragansett Bay a breakwater for Bristol Harbor; that the feeling of the Chamber be transmitted to the Engineers at the October 2 public hearing in Newport by a representative of this body; and that the Rhode Island Congressional delegation and the Public Works Committees of the House and Senate be notified of this action."

Very truly yours,

(Signed) Herbert M. Eisenstadt

Secretary

(End of letter.)

BRISTOL DEVELOPMENT COMPANY

1128 INDUSTRIAL BANK BLDG.

PROVIDENCE, RHODE ISLAND

September 25, 1956

Harbor Development Commission

Bristol, Rhode Island

Gentlemen:

The report of the U. S. Army Corps of Engineers on hurricane protection in Narragansett Bay has come to our notice.

We find that there is a serious omission on the part of the engineers in that there is no provision for specific protection of the Bristol water line.

This company owns very valuable industrial property on the waterfront and this building is now occupied and will be occupied by many firms who will employ hundreds of people from Bristol and the immediate vicinity.

We feel that for the welfare and for the benefit of this town, it is most essential that these people be kept employed and that we be able to interest prospective industry to come into our building free from or at least elevated from constant hurricanes and the threat thereof.

Therefore, we would respectfully request you to voice our objection to the now proposed plan which omits Bristol from the consideration of protection from hurricane waves.

I trust you will, therefore, press our cause to our Congressman and before any official body who will recognize this serious omission and correct the same and thereby give us the same protection which is being given to our neighboring towns and cities.

Very truly yours,

BRISTOL DEVELOPMENT CO.

(Signed) Irving L. Solomon, President

cc: U. S. Corps of Engineers

150 Causeway Street

Boston M., Mass.

(End of letter.)

J. T. O'CONNELL SUPPLY COMPANY

267 THAMES STREET, BRISTOL, R.I.

September 26, 1956

U. S. Army Engineers Corps
c/o Harbor Development Commission
Bristol, Rhode Island

Gentlemen:

As the owner of an extensive area of business property bordering the Bristol, Rhode Island harbor, we are keenly interested in the proposed building of protection barriers in Narragansett Bay.

We particularly request that serious consideration be given to the erection of a barrier in Bristol harbor that would substantially supplement the protection a barrier in the lower bay area would give to this storm exposed area. We have been advised that while a lower bay structure might effect the water level in Bristol harbor, but will afford little or no relief against wave damage, such as has been suffered in past years.

The 1938 hurricane caused flood water damage on these premises -- then owned by the Seth Paull Company -- totalling approximately \$50,000.00 and in the 1954 hurricane Carol this company suffered the loss of the buildings on the waterfront, their contents and assorted stocks of lumber, building materials, paints and hardware in adjoining buildings resulting in a loss to us totalling a very substantial loss in addition to badly crippling our business schedule over an extended period.

We sincerely trust that we may look forward to some material relief from similar occurrences in the future, and that your honorable

body will see fit to give studied consideration of plans that will involve storm condition in Bristol Harbor.

Respectfully,

J. T. O'Monnell Supply Company

(Signed) Joseph M. Loney, Manager

(End of letter.)

JOHN W. CHURCH

BRISTOL, RHODE ISLAND

September 27, 1956

Corps of Engineers

U. S. Army

Boston, Mass.

Gentlemen:

As an owner of residential property on the waterfront at the head of Bristol Harbor, Bristol, Rhode Island, I would like to make my position clear on the subject of a breakwater.

My wife and I have escaped from our home twice during recent hurricanes. We left our home as the waves had begun to tear the back section of the house away. It was evident to us that the damage done by waves was more serious than might have been done by a flood alone.

Bristol Harbor is open to a fourteen mile stretch of water to the south. Unfortunately during both hurricanes the worst winds were from the south, thus the sea reached its peak when Bristol Harbor was exposed from the worst direction.

Therefore, we ask you to consider some type of breakwaters in

Bristol Harbor to insure better protection during hurricanes.

Very truly yours,

(Signed) John W. Church

(End of letter.)

THE LOBSTER POT, Inc.

119-121 HOPE STREET

BRISTOL, RHODE ISLAND

September 24, 1956

Harbor Development Commission

Town of Bristol

Bristol, Rhode Island

Gentlemen:

I have read with interest the recent published reports made by the Corps of Engineers, U. S. Army, relative to so-called "hurricane barrier" protection for Rhode Island.

While the lower bay proposed barrier would, in my opinion, serve the best interest of the majority of the people of this State it completely omits any safety from wind-driven waters between the barrier and the Town of Bristol and its valuable waterfront properties.

As a large restaurant, located directly on the water, we are and have been extremely conscious of the vast damages hurricane winds can wreak. The employment of between twenty and thirty people and the welfare of that many families are directly related to the future of this business. Any further damage by wind-driven waters might completely eliminate the prosperity and future which these families

now enjoy.

It is for this reason that we ask your support in seeking definite action by the Corps of Engineers for a breakwater or breakwaters at the most feasible location south of Walker's Cove to eliminate, or at least minimize any possible future damage from tidal waves and/or wind-driven waters.

Very truly yours,

(Signed) Leo F. Sullivan, President

The Lobster Pot, Inc.

(End of letter.)

DIXON CORPORATION

BRISTOL, RHODE ISLAND

September 26, 1956

Mr. Francis J. Murphy
Chairman, Subcommittee
Hurricane Protection

Bristol Harbor Commission
Bristol, Rhode Island

Dear Frank:

I have read with interest your recent letter and publicity regarding the public hearing in Newport in connection with a possible breakwater here in Bristol.

I want to wholeheartedly support this idea and regret that I will be out of town on October 2nd and will not be able to attend.

In the last hurricane, about \$10,000 worth of damage was

done to my boat, all of which was caused by wave damage and not necessarily by high water. In addition, Dixon Corporation was closed for approximately ten days, putting some one hundred to one hundred fifty people out of work. This was due to many causes as a result of the hurricane, but certainly wave and wind damage is high among them.

Right off the pier at Dixon Corporation, a life was lost and this was definitely due to the high seas, and this loss would have occurred regardless of any barrier in the Lower Bay. The Uprer Bay and the small boatmen, pleasure as well as commercial, deserve the protection that a breakwater would afford them in Bristol Harbor.

Very truly yours,

DIXON CORPORATION

(Signed) Robert Miller

(End of letter.)

QUITO SHELLFISH COMPANY

411 THAMES STREET

BRISTOL, RHODE ISLAND

September 21, 1956

Harbor Commission

Bristol, Rhode Island

Gentlemen:

I have studied the report of the Army Corps of Engineers on hurricane protection in Narragansett Bay, and if I am correct, see no mention of protection for Bristol Harbor.

I am a wholesale dealer in shellfish, and have forty-five

fishermen working out of my shop. My business not only represents an investment of all the money I have, but also means jobs for the forty-five men. To them it is important that I remain in business. If I cannot figure ahead from year to year without worrying about hurricanes, my business will not grow and the fishermen will not have much faith in the future.

The only place where I can operate is on the water. I cannot have my place of business on top of a hill, because shellfish don't grow on farms. Therefore, I have to stick it out where I am, take it or leave it.

Will you please do what you can to get the Engineers to stop playing games with the big city politicians and have them realize that the little fellows are human beings, too.

Respectfully,

QUITO SHELLFISH COMPANY

(Signed) Peter Quito

Owner

(End of letter.)

Bristol, Rhode Island

September 27, 1956

Mr. Francis J. Murphy, Chairman
 Sub-Committee Hurricane Protection
 Bristol Harbor Commission

Dear Sir:

As a resident of Bristol, and very close to the shore of

Bristol Harbor we would like to express the reasons why we need a barrier to protect our lives and our home from wave damage caused by hurricanes.

We had just bought our house a month before the last hurricane which caused considerable damage to the extent of close to \$5000. The water reached the first floor of our house which was completely surrounded by debris, lumber, row-boats, part of a building and on top of all that - the black sticky oil from the mill.

We lost a three car cement block garage and everything which we had in the cellar, including tools, canned goods, storm windows, spare screens and two bicycles, and also many more things. It was a heartbreaking job to clean up all the mess made by the hurricane and it was many months before everything was cleared up. We also lost a board fence and all the lattice work under the sun-room was ruined beyond repair. The oil tank under our sun-room had to be replaced with a new one. The walk was spotted with oil and we have never been able to get rid of them. The stone foundation of our garage was covered with oil and it made an ugly looking sight.

The waves from the harbor ripped off the shingles on our house and we are still paying for the damage done by the hurricane.

As I am writing this letter we are told that the hurricane Flossy will bring abnormally high water accompanied by gale force winds. If we had a barrier we would not have to face further losses of \$5000 or more and many sleepless nights.

We have been trying to sell our house, but when we inform

then how high the water came, they are not interested, although they like the house. The result is we still have the house and the worries at hurricane time. Please have Congress do something to protect us in the way of money losses, possible ill health caused by the hurricane and give us peace of mind and not have this continuous worry every year. We cannot stop hurricanes but it seems to us that this great United States can do something to stop the damage, even though it is only a hurricane fence to stop the floating articles from rammng into our property.

We have a tenant upstairs who lost everything in the cellar, except a washing machine which had to be repaired, the same as ours was. This caused great inconvenience, but we still feel quite sure that something can be done and it should be done at once before the hurricanes overtake the surveys.

Yours truly,

(Signed) Mr. and Mrs. Martin F. Nello

(Conclusion of letters attached to Exhibit Number Four.)

MR. FRANCIS J. MURPHY: I would like to leave four or five copies of this report with you gentlemen.

LT. COLONEL KASHEIDORF: Thank you very much Mr. Murphy. We will attach them to the record.

Is there any other town official who wishes to be heard at this time in favor of the proposal?

(No response.)

Is there any other individual representing a group or an

organization who wishes to be heard at this time in favor of the proposal? Yes, sir. This gentleman in the back, sir.

MR. DANIEL C. BOLHOUSE: I am Daniel C. Bolhouse, Executive Secretary of the Newport County Chamber of Commerce.

I would like to speak in favor of the proposal number two as proposed by the Army Engineers, and at the same time to qualify that statement to include a number of questions.

The Chamber of Commerce would like to thank the United States Government, through the Army Engineers, for the interest which they have taken in our problem. We realize that Newport has suffered a great deal of damage through flooding, as well as through wind, in a number of hurricanes. And I have a number of pictures here, which I would like to submit for the record as evidence of that flood.

We don't feel qualified at the Chamber of Commerce to pass on the engineering or other merits of such a barrier. However, we do feel that Newport must have some sort of protection. And realizing that the community itself or any other community is not big enough to do the job for itself, we must look to the United States Government, and in looking at them to the Army Engineers. The Chamber of Commerce feels that the Army Engineers are qualified to do a job in protecting Newport from hurricanes, that they will work the barriers or whatever else they can, out to the best advantage of Newport, and that in proposing plan number two they have investigated thoroughly and feel it to be feasible.

The Chamber of Commerce will be in favor of plan number two,

if it can be made navigationally feasible for Naval ships and yachts, if it will not effect our wildlife -- and when I say wildlife I mean shellfish and fish live in the Bay -- and lastly if it does not create unfavorable conditions in the Bay, such as pollution.

I would like to submit these pictures for the record and thank you for the opportunity of being heard.

(The six pictures submitted by Mr. Bolhouse are marked Exhibit number five.)

LT. COLONEL WASHBURN: Thank you, sir.

Is there any other individual representing an organization who wishes to be heard in favor of the proposal?

I recognize this gentleman.

MR. GEORGE D. WEAVER: My name is George D. Weaver. I am Chairman of the Property Committee of the Yacht Association of Newport.

Much has been said about the various proposals that have been presented. And we would like to say here that we have been keeping in close touch with them when it was first started by Governor Roberts, his Commission, Redevelopment Body, that started this project, perhaps after the 1954 hurricane, and we have followed it into the process now where the Army Engineers have brought in this report. And it seems from all the reports and surveys that have been made on these hurricanes and their effects, that the people of Newport are going to have to live with these hurricanes for sometime to come, if not forever.

It was a great comfort to us to see the Army Engineers given

an appropriation to carry forward this work. And to those of us who have suffered by the high waters, a large portion of the people of the Point Association, were greatly enthused over the fact that this report was going to be made, and we were hopeful that something would come out of it.

The 1938, 1944 and 1954 hurricanes inundated much of the Point area of the City of Newport. But it is hard for me -- and I guess it is hard for anyone -- to say just how much people do suffer when they are hit by these high waters. It is heartbreaking and sometimes tragic to see the things that people have to go through, to see a lifetime of work washed away in the course of an hour and a half.

And we know the Army Engineers spent a great deal of time and effort on this survey and we know they have done a thorough job. We also believe and hope that all the interests affected by these tidal waters, and all the people and their problems must be taken into consideration in the final outcome.

Senator Green, Senator Pastore and Representative Forand have been very helpful in bringing Newport's concern to the Corps of Engineers. I think they will attest to that. Most of the work in the future on this, we imagine, will be done in Washington. We are hopeful that these gentlemen will bring Rhode Island's case and Newport's case down to Washington, so that the gentlemen down there, Senators and Congressmen, will see fit to appropriate monies to bring what is on maps now to reality as far as we are concerned.

In bringing Newport's problem forward, it is almost impossible

for us to state the statistics, but in the case of the people effected by these high waters, I roughly would estimate it is over onethousand people that were washed out of their homes in some sections. Probably the maps and surveys that the Army Engineers have will show that areas beyond the water line or below the walls that are preventing the water from coming in at the present time. In other words, once the water breaches these walls, the flooding is very fast, very rapid. In some cases people haven't been able to get out of their homes once they knew that this was coming in the low-lying sections.

I would like to point out that a part of this area is the main business district. When we say that we mean Thames Street here in Newport and that is completely covered by water. I imagine there are representatives from the various utility companies here tonight. I imagine they will state their case, but some of the corporations - - and I think this list is a comprehensive list, and it will stand up to fact upon investigation.

The Electric Corporation, their main plant which supplies electricity for Newport, and not only Newport but outlying communities was inundated by water.

The same holds true for the Gas Company and their plant.

The City Water Department's main office and its main reservoir were covered by these flooding waters. And I think it is a serious problem here in Newport when that main reservoir of fresh water was covered over by these hurricane waters. And it was quite touch and go where the water supplies were going to come from for some time.

This includes fire headquarters. This is the main communication system for the first units to respond in this, of this nature, and their communication system is located in this area.

The same thing holds true for Police headquarters.

Now the Public Works Department, the entire yard is right on the waterfront, and there was, it was completely covered over.

And one of the main pumping stations of the new sewage treatment plant are located in this, in these areas that includes the main section of the railroad yard.

Now I think that this probably -- and probably there are more that I have overlooked -- but I think that will show the main concern of the City and communications lines both by radio and other means are fully in danger during these high waters.

I would like to say in the course of events if the Lower Bay Barrier may not become a reality, we urge that every consideration possible be given the Point areas and the Downtown areas, that a barrier be built to protect these people.

Thank you very much.

LT. COLONEL WACHENDORF: Thank you, Mr. Weaver.

Is there any other individual representing an organization who now wishes to be heard in favor of the proposal?

I recognize this gentleman.

MR. RICHARD C. ADAMS: My name is Richard C. Adams. I am President of the Real Estate Board of Newport County.

While I have not been authorized to speak for the Board, I feel I am, I may be expressing the opinions of most of the members of the Board.

I have experienced all the troubles of hurricane damage since before 1938, and I don't think that anybody realizes more completely the troubles and the difficulties of individuals and persons, than someone who is in the Real Estate Business. The grief comes very close to us, because most of us are also in the insurance business, and we have those problems to handle as well.

The only feature of this discussion on which I wish to comment at the moment is this. There is, there isn't any doubt, as far as I can see from a real estate man's point of view, that we hope that plan two will be adopted. The main thought that we have in our community is inadequate communication.

Now if the amount of money that is planned to be spent on a Bay Barrier is done, to me it would seem that there could be some way to coordinate that with the enormous road plan that is being considered Federally, so that the Bay Barrier could be built to serve its function, and that it in addition, could be made a method of road building between Jamestown and Newport.

There is already a bridge from the mainland to Jamestown. It would seem, locally, that funds could be added to the amount of money that the engineers decide is necessary for a barrier to provide an adequate roadway. Then it would seem to me it will be up to the State of Rhode Island and the City to find that means of tying up the area

in Newport, which you gentlemen designated as the termination of the barrier, to provide adequate transportation through to Massachusetts and the rest of our State.

Thank you very much, sir.

LT. COLONEL WASHINGTON: Is there any other individual representing an organization who wishes to be heard?

I recognize this gentleman.

MR. FRANKIS K. SULLIVAN: My name is Francis K. Sullivan. I am a resident of the City of Newport.

A little time back I was appointed by the Mayor as Chairman of a Newport Bridge and Tunnel Commission. I also have some holdings in Jamestown. And I was going to withhold any statement that I may have made here, until such time as individuals were to be heard.

First off, I would like to compliment you, sir, on listening to these various Naval Officers, and in appreciation of the Corps of Engineers, the studies that have been made. And in view of this, I would appreciate, sir, that we realize that it is the assigned task of the Corps of Engineers, which one time I had the privilege to serve, to render decisions and advise the President, the Congress and the Senate, as to how they may approach problems concerning the navigation of waters, the navigation of waters that both the Navy and the Coast Guard, as Maritime groups, are concerned in.

I feel very positive that the monies that the Corps of Engineers have seen fit to spend in their study of the problem have given them an absolute knowledge as to what the protection will be,

the problem as it exists and how they can best cope with it.

We know then to be objective, and I am positive that the suggestions that are made here in this plan two, as it is a matter of money, are the most beneficial for the people in our area, for the marine activity in our Bay.

And finally let me say this to you all. I stated that I had been a chairman of a Newport Bridge and Tunnel Commission. Ladies and gentlemen, at that time, which was last May, sometime during the winter months, I accepted the assignment from our Mayor, a very honest, up-right, sturdy gentleman. I can't say enough of him, for him. I know him for what he is. I asked him to come down and join with me, in a visit to these people, that were concerned in the construction of a tunnel and a bridge and a crossing through our Narragansett Bay area, Lower Narragansett Bay area. We found that there was a way to build a tunnel. We found that there were people down there willing to invest money in this area.

We found, three, we were getting a very negligible answer from the parties in power.

Four, when we come back to get some sort of a group who would bring our thoughts through to the State level of Government, we found that there was a hesitancy upon those that were concerned with the parties in power.

We found, five, that this study was under way. And that if we would wait and bide our time, that it might be just possible that this crossing could be made through a way suggested through that Lower

Bay Barrier.

This is not the function of the Army Engineers present assignment. Their assignment is that of blocking off the waters that come upon us during a time of hurricane. This is a secondary project, this Bay crossing. It has been interjected into this meeting at least three different instances, as I recall.

For my own part I am still willing to wait until such time as you are able to finalize your plan. And let's hope the Lord will guide your efforts, and that you will be met with success.

LT. COLONEL WACHENDORF: Thank you, Mr. Sullivan.

Now is there any other representative of an organization who wishes to be heard in favor of the proposal, any individual?

I beg your pardon, sir. I recognize this gentleman, Mr.

Stone.

MR. ANDREW A. STONE: My name is Andrew A. Stone. I am President of the Thames Street Merchants and Property Owners Association.

All I wish to say here, is that we endorse the plan of the Lower Bay area, and that our group represents ten percent of the tax payers of the City of Newport.

In that area upwards of a thousand people are employed.

While I haven't been here during the hurricane, I was in other parts of the country, and have seen the effect of it. I feel that not only the people of Newport, but the merchants and our economy would be seriously effected if we had a recurrence of the last disaster.

We, therefore, as an organization, heartily endorse any efforts

directed towards alleviating that danger.

LT. COLONEL WACHENDORF: Thank you, Mr. Stone.

Any other person, who is a representative of an organization, who wishes to speak at this time in favor of the proposal?

MR. MAURICE BORDEN: You spoke of favor, whether you represent an organization or not?

LT. COLONEL WACHENDORF: That is right, sir. Then do you wish to speak?

MR. BORDEN: Yes, sir.

LT. COLONEL WACHENDORF: You have the floor.

MR. BORDEN: That's good.

You have here barriers. And, of course, you will have to answer me a question or two before I know what I am going to talk about.

LT. COLONEL WACHENDORF: Excuse me, sir. Would you mind speaking up here at this "mike" so everyone can hear you?

MR. BORDEN: If you will tell me the difference from the rise of tide from one side of your barrier to the other, you probably will help me to start. The main high tide of fourteen feet in the last hurricane -- What would be the main height to the north of your barrier?

LT. COLONEL WACHENDORF: Your question, I assure the answer to your question depends on the rest of your presentation. I am taking those questions, and if they are not commented upon by individuals, who are present, we will have certain comments on them at the con-

elusion.

However, in answer to your question, since you raised it, if the outside elevation -- of course, this is all assuming the size of the designed hurricane -- but in the illustration, if the outside elevation were eleven, the barrier in place would keep the elevation inside to elevation mean sea level three. In other words, it would reduce the maximum height by eight feet at Newport.

MR. BORDEN: At Newport?

LT. COLONEL WACHENDORF: At Newport.

MR. BORDEN: But at the Barrier, what would it reduce it?

LT. COLONEL WACHENDORF: Eight feet.

MR. BORDEN: Eight feet at the barrier.

LT. COLONEL WACHENDORF: That is correct. That is our opinion based on our studies.

MR. BORDEN: That is your opinion?

LT. COLONEL WACHENDORF: That is right. It is also confirmed by our model studies.

MR. BORDEN: What would -- I can -- I understand what you mean. You say reduce, eight reduced to three. Now what I am speaking of and in favor of -- Well, take the Conanicut River. I am in favor of a barrier, and what I can see of the Sakonnet River, you have not gone far enough there. You have a barrier -- if you will understand -- a barrier here, (indicating on map) which you are going to raise to an elevation of twenty.

What are we going to do for the low-land here (indicating on

map) when you turn back the water through here, (indicating on map). And this is -- This has been here. (indicating) Here has been some of your greatest losses of boats and industry, and in the fishing industry alone. In homes right here. (indicating)

By already having -- Already the Town of Portsmouth has a barrier, not one but two. We have had two barriers in the Town of Portsmouth for, of course, years and years. One being the Stone Bridge. One being the Railroad Bridge. And that is what has caused mostly the damage here. This is what has brought back your tide here, (indicating) which is going over the highways here, (indicating) which brought back tide here, (indicating) which overflowed what is known as the gutter here. (indicating)

Now there is absolutely in here and the City of Newport -- You are willing to put a barrier to take care of this coastline on the west of Aquidneck Island, but on the east of Aquidneck Island there is no barrier.

I understand from the gentleman here telling us the natural winds were south, southeast of a hurricane. He is right. It looks so too. Did you say it is south, southeast of a hurricane? The Sakonnet River is practically north and south which would get the full amount of that breeze, a seventy-five mile breeze. Let me tell you, and you can back it up here, (indicating) what is going to happen here. (indicating) I can tell you what will happen because this is where you lost many a home. This is where you lost fifty foot of property right here in this town. (indicating) This is where you

lost it. And if you are going to back up here, (indicating) what are we going to do to the people here in Tiverton, of Nantuxet Pond, where the bridge went out? No place. That is only a hundred feet wide. And they lost their bridges. And they lost twenty boats in here, (indicating) valued, all of them, somewhere around two thousand a piece.

When you talk of valuations, the hardest hit section in the State of Rhode Island, from here to here, (indicating) in an enclosed area, was the hardest hit section in the State of Rhode Island commercially. There is no other part of the State of Rhode Island had the damage commercially, industrially. I mean to say not plants but like the fishing business and like that. Then you said right here. (indicating) But yet I can see nothing whatsoever here (indicating) to protect the people on the east side of Aquidneck Island, and I do now recommend, before you barrier here, (indicating) make sure that you protect them somewhere here. (indicating).

And I think that is good engineering. And I don't see how a group of Engineers could have slipped on that.

LT. COLONEL WACHENDORF: Do I understand your proposal, sir, is that the barrier in the Sakonnet River be placed in a location farther south, so as to provide greater protection for the areas along the shores of the Sakonnet River vulnerable to hurricane tidal flooding, is that correct?

MR. BORDEN: It is correct, but I said too, it would because I understand - - which I told you very clearly, that we did not need at this time an eight foot rise of tide, only a normal which is on the

northeast or a southeast heavy tide of two foot breaks all over here now. So this would be a wonderful idea to go along with, if you would only come back here. (indicating) And you can not prevent this barrier here which has been causing all of this trouble here. (indicating)

Now I would like to say here, you are going to give us a thousand foot by probably showing the depth here, (indicating) which by two-thirds, a fifty foot draft, is that what you said? I am going to agree with the Councilman from Newport, Mr. Tierman. There is nothing I can say to what he said to be constructive, but he made a wonderful speech and gave you a lot of thought, food for thought -- I will put it that way -- to watch what it would mean for a vessel coming in in that hurricane when it is thick, and you can't see the width of this room, and the tide won't be four to five knots, as you explained in the Cape Cod Canal, landlocked canal -- using it for illustration -- will be just open ocean at a south, southeast wind. And let's see you make into it, and if you don't make it, God Bless you.

LT. COLONEL WACHENDORF: May I impose a couple of questions to you, which you may or may not care to comment upon, while you have the floor?

Do you have a definite proposal either for the relocation of the Tiverton Barrier or for a modification of the proposed opening, both as to the width and the depth in these passages?

MR. BORDEN: Now I spoke of the depth in the Newport area

mostly, because I am interested in those that make a great living in the Bay through fishing, and I am not interested in moving the barrier on the Sakonnet River. I am interested in another barrier lower in the Sakonnet River.

LT. COLONEL WACHENDORF: Thank you very much.

Now is there any other individual who wishes to be heard in favor of the proposal?

This gentleman here. I recognize this gentleman.

MR. HERBERT HAMBLY: My name is Herbert S. Hambly, Town Clerk.

I would like to go on record as favoring what Mr. Borden has just said, having a barrier put across here, (indicating) because this is always flooded at the least tide in through here. (Indicating) And we in Tiverton, we lose a lot of property right through here. (Indicating) I would like to go on record as saying that, changing that further south, further south, yes.

LT. COLONEL WACHENDORF: Do you have any specific location, sir?

MR. HAMBLY: Well, I would say down below, right on the Tiverton line or down in here. (Indicating) There are an awful lot of houses down in there that are flooded in hurricanes. Each hurricane they are flooded right out.

LT. COLONEL WACHENDORF: Thank you very much, sir.

Now I am still listening, looking for any individual who wishes to be heard in favor of the proposal. Anyone care to have the

Floor?

All right, at this time, at this stage, we normally have a break for a few minutes. If you would desire to continue this hearing -- As I indicated at the start, we will now hear from all people who are opposed to the proposal, who are opponents to this proposal. And to give me some idea as to how many people wish to speak, I would like to ask for a show of hands from each individual who desires to take the floor.

Will you raise your hands?

Thank you, sir.

I noticed two hands. And in view of that, I propose to continue this hearing to conclusion unless there are objections, and we will forgo a break at this time.

Now I recognize this gentleman in the right here, who, as I understand it, wishes to speak in opposition to the proposal.

SENATOR FRANK MEMOROUGH: General Fleming, your staff, ladies and gentlemen:

I attended your meeting last night in Providence at the Central High School Auditorium. I don't stand here qualified as an engineer. I don't stand to oppose the barriers.

I think it is a fine thing for our section of Narragansett Bay and it is a tribute to see that you people have laid out these plans, General. I say this, that previous to the erection of what is now the Stone Bridge in my town, in Tiverton, which I represent in the Senate in the State of Rhode Island, many of the older inhab-

itents who recall the old bridge previous to the present one tell me, and have consulted with me, and conferred with me, and asked me to direct my questions with regard to the tide running out following a hurricane from the Mount Hope Bay area. We feel that to keep the waters out is one thing.

In the height of the hurricane with the on-coming tide and in-coming tide, we suffer mostly with the tide running out, sir. We feel that another barrier possibly in the area of the railroad trestle abutment might be possible, or north of it, might possibly be a solution against the damage which we have suffered in three hurricanes since 1938.

I want to take this opportunity as well to thank you, General, and the Corps of Engineers in the fact that you have considered to leave the abutment of Old Stone Bridge in as a protection against further hurricanes, sir, but we do feel -- As I say, I am not qualified. I merely pass on the question that has been presented to me to direct to you, sir, with regard to the out-coming tide.

LT. COLONEL WACHENDORF: Would you state your full name Senator, for the record?

MR. McMERROUGH: Senator Frank McMerrough, Senator from the Town of Tiverton.

LT. COLONEL WACHENDORF: Thank you, sir.

I suppose some remark on my part is in order with all these compliments I am getting, the promotions. I know a lot of you people weren't in here when I introduced myself. I am a Lieutenant Colonel

in the Corps of Engineers despite this Navy type of uniform I wear, and my name is still Washendorf.

There was another individual, a gentleman who wished to be heard. You have the floor, sir.

MR. ERICH A. O'D. TAYLOR: My name is Erich Taylor, a Councilman of the City of Newport.

My opinions here and in the council are individual. They are none the less based on a good deal of experience and devotion to the Town in which I live and the State in which I am very proud to be a member, sir.

I am not perhaps as commendatory of the efforts of the Army Engineers as some of the other gentlemen are. I have no objection to their efforts, and indeed, I think that thanks should go to Senators Green, Pastore, John Fogarty and Aime Forand, if any thanks are due at all.

I think that the question of protection of our Bay and of our people, who are exposed to hurricanes, is vital. And I agree that everyone should have protection, but I don't agree that the protection of a very vocal few over a short period of time -- Many of them, as one gentleman frankly said, are poorly situated for the business in that they now are, owing to their unfortunate clinging to an antiquity, which some of us hope is passing, should it tie us to a future which is equally hopeless.

I noticed with interest the statement that in any event the beneficial qualities of this proposal were two to one. I wonder,

and I listened with interest to hear, but didn't hear, the deleterious effects of that affair accounted at all. I may be wrong, because I have not seen the report -- apparently others have been more fortunate -- but I did not see the report, which I assure you, I would have read. It was not made available to the Newport City Council, in that there was any picture other than that we would prevent damage. There was no picture of the harm that we must do.

I am particularly interested, as my friend Representative Borden from Portsmouth, who in my opinion is the best informed man on the Bay, has spoken to you here. Maurice (referring to Representative Maurice Borden) has explained -- He has sailed this Bay, and knows this Bay in storm and in sunshine, with the Army and the Navy, in those unhappy days when we still had an amendment to the Constitution.

Rhode Island is still interested in producing its pirates, and I am very glad indeed that we can produce them. It has been the salvation of the State before. It should be again.

The thought that we are to become a land-locked harbor with the very obvious danger of silting the Bay, no matter what anyone may say about it -- Because though I often disagree with them, tonight I couldn't be in more close agreement with Captain Tiernan. I know the great danger of that as well as the bones out to my hand.

In Corpus Christi, Texas, where a similar rock barrier of enormous size was constructed, where if you tried to get out of it in a small sailing boat except with very favorable tides, you displayed better navigation than in winning the Bermuda Trip. I have had the

pleasure of trying it. And I think I have been along with others -- And I am not a competent navigator I admit, but I like to sail, and I have had the pleasure of being on that barrier as often as out of it.

It did silt up behind it in Corpus Christi. And I suppose the answer to that is that the New Asos River brings down the silt. Well, if anyone looks at the Nonesuch and some of the tributaries of the Providence, they are not exactly clean.

I would mention the problem of salinity, which no one else seems to have taken up. It is my business to be a chemist, and I have seen with considerable interest the danger that takes place in many places by this changing salinity. We have seen the departure from our Bay of our oyster beds along with various weeds that were there owing to changes of salinity possibly due to some kind of pollution, possibly due to some changes in general prevailing winds. I know that the Rhode Island Marine Laboratory had no definite answer for that two years ago. They have, of course, been at work, and they may yet have come up with one which they have not published.

I notice that the picture of these large Bay barriers at the mouth are supposed to be protective. I don't know, but I would doubt if the barrier at the Bay mouth would very greatly protect our own harbor. It is possible that it would, but it is also quite possible that it wouldn't.

As I understand it, the Sakonnet is going to be allowed to flow freely, depriving the City of Newport of its one post hurricane

source of water, the pond of Nonquit, which will instantly salt with your barrier as you have it. And even if we were to develop the Mason Reservoir, which I hope to do from the City of Newport, there will be such a small source of water there that with Eastern Pond out of service, the proposed barriers will in no way protect Eastern Pond or South Pond our main source. The theory that this would in any way be beneficial to our water supply falls to the ground. It wouldn't be beneficial to our water supply in the barrier. It might, we don't know, of course. Perhaps you do from your studies, but it doesn't seem to me that it would prevent in any way an increase of flow which would bring it into the ponds. Our ponds are open to the sea directly south. The level there, as the gentleman from Tiverton said, is even with a high tide, the land is open and the dam is not of sufficient height. Perhaps if we could get it up we might take care of it.

I noticed the question of Island Park receiving protection from the barrier. Well, of course, if the Barrier is up there, Island Park will float underwater. I think Mr. Borden very correctly summed up that picture. I can see that, as I said, much of our Island is rather suffering from the development.

Now I noticed also that in the city of Newport for years we have never had a barrier. One of my hobbies has been the history of my city. And the trade of colonial Newport very largely depended upon the fact that, unlike New York Harbor which was protected by barriers, the Harbor of Newport might be entered even in winter. It was a custom in sailing days to trans-ship from Newport carrying by cart across

Connecticut. It was that one reason why we joined the United States. We may have made an error. Rhode Island is certainly individual. But we did make an error, because to sell the material that was landed in Newport, we had to take it across Connecticut, and if we didn't join the United States we would have had to pay duty on it. But it is true that in every kind of weather Newport has been and can be made.

With a narrow aperture -- One thousand feet may sound large, but it is kind of a bird's eye, bull's eye to hit that, particularly with the currents you definitely will have trouble with it.

Now in this picture to me I say that we are undertaking a grave reconstruction of nature. It may be sound. It may not be. Personally I don't think grave reconstructions of nature are. We have seen attempts to do that in filling in certain land in these times, and the level of the water changing, we come back to the primitive.

I have in my possession a map made by the Officer in command of cartography for the Russian Gulf. It was very interesting to me, for me, to see following the 1938 hurricane, how the ancient barriers and marks of our coast land which has been silted in, filled in, built on, moved down, pushed around Rhode Island, returned with the appearance of a storm. Now it can be that we are going to build such barriers, that they will not be moved around, but as Mrs. Parkington found, the Atlantic Ocean is rather persistent.

In conclusion, to my mind the protection that Bristol seeks, the protection that Providence seeks, are the kind of protection that Newport should seek.

The idea of turning Narragansett Bay into a semi-sea-line back water is not one that appeals to me. Nor do I think that it has any future for our city. It would be far better to adopt a policy, and perhaps even cheaper, to adopt a policy of forbidding the building in dangerous areas and provide breakwaters or provide levees. And again I have in mind Corpus Christi where a very fine device of that kind, as you gentlemen are well aware I am sure is in existence, does exactly that thing. The high levee which has been erected - - I think it is fifty feet, I may be wrong - - at Corpus Christi, the entire business section of the town has been rebuilt. And I don't believe that the expense would be too much greater.

If the idea is simply to protect the lower regions of the upper business element in Providence, perhaps we are not interested.

Thank you.

LT. COLONEL WACHENDORF: May I ask a question, sir?

Do I understand these breakwaters which you recommended as substitutes are for wave action protection and not for lowering of the tidal level of flooding behind such a breakwater?

MR. TAYLOR: My feeling would be this. There are two kinds - - I didn't mean, intend, to get into an engineering argument in that undoubtedly not having prepared myself I could readily be confused. But what I am talking about is this. Perhaps you have in mind the Harbor of Corpus Christi, sir. Are you aware of it, sir?

LT. COLONEL WACHENDORF: Yes.

MR. TAYLOR: If so, perhaps you and I can talk, because I can

tell you what I saw there and you will know what and whether I call it right or not, whether it is going to be right.

All right, along the entire waterfront there is a high cement barrier, which you probably are aware of. There is a wave breaking device in front with dumped rock, which was done by a railroad. I understand that was all brought in from Utah. That may be incorrect or not. That is all out in front to prevent the waves from breaking. They ran out "T" piers to form this marina behind that, but that takes an awful beating when there is a storm. And behind that are these high levees, as I say about fifty feet, in the base which prevents the tide or a heavy storm, and they had a much heavier one than we coming in to the city.

This doesn't concern the rest of the Bay there, nor does it prevent considerable backing up through the Oasis River, which I understand the oil people have taken care of with rather expensive walls of some kind. I know that Umple Oil Fields, that I saw quite a bit of down there, are proceeding in that fashion, which I think they took care of themselves.

It seems to me that what we are going to do is for a few minutes or few hours of the centuries are to provide ourselves with a land-locked pond, which will forbid its free use. And to me that is like saying it is so much better to be sitting down in a chair because you will live for ninety years instead of being alive a little bit for forty.

Thank you very much.

LT. COLONEL WACHENDORF: I understand. Thank you.

Now there was one other gentleman, I believe, who asked to be heard. Yes, sir, do you wish to speak in opposition? There will be ample time for anyone else who wishes to speak in rebuttal later.

MR. GEORGE D. LEWIS: Mr. Chairman, my name is George Lewis. I am in the wholesale fishing business in Newport. I have been since 1904, a period of over fifty years.

I have been wondering about the marine life, what effect this barrier was going to have at Conanicut Island. I had six boats there today, in equal amounts yesterday, which provided anywhere from maybe five hundred to ten thousand pounds of fish. I can see surface fish like scull or hake, possibly those barriers might not bother them, but on ground fish like flounders or flukes, knowing about the fish business, it would be my idea that when these fish strike these barriers it would turn them, shoot them off. I don't want you to think I am opposed to barriers. There is a question in my mind whether the amount of money expended for these barriers would be compensated or not. We have had traps at Narragansett Piers since 1938. We took a licking of twenty-five thousand dollars in six hours. Traps in the seventy-two feet of water anchored by twenty-five hundred pound anchors which carried over the top of banks at Narragansett into a woman's duck pond.

Now I want to say this. The barrier might be all right, but I don't think anything can withstand the old fellow up above. That is my opinion, and I think when the board considers it they should

seriously think the amount of money it is going to cost whether money is expended wisely or not. I really seriously am interested in the marine life. It has been my hobby all my life. We produce here in Newport about three million dollars worth of fish a year. It is quite an item in the City of Newport. And that barrier at Conanicut Island certainly will hurt the marine life.

That is, I hope, that I seriously believe that there should be a barrier up at Field's Point to take care of the City of Providence. Down there at the Biltmore Hotel it is very low. Something like that would do a lot of good.

On these barriers, I would think it would be well to wait seriously before you come to any conclusion. I am strongly opposed to that barrier at Conanicut Island.

LT. COLONEL WACHENDORF: Thank you, sir.

Is there anyone else who wishes to be heard, any individual?

(No response.)

Apparently there is none. This gentleman wishes to speak. Would you come up front please, sir?

MR. F. W. KING: Ladies and gentlemen:

There has been considerable talk about the Lower Bay Barrier and the opening of one thousand feet. I wish to point out at this time that in previous discussions, earlier discussions with the Army Engineers, we of the Naval Base pointed out that an opening of less than fifteen hundred sixty feet would be unacceptable.

Our reason for pointing this out is that we are now building

ships the size of the Saratoga, the Ranger, the Forrestal, and mammoth tankers of the type of the Missinima, the Neosher and tankers drawing forty-five feet of water. He objected to the depth, the particular depth of fifty feet.

The Newport Harbor is one of the two class "A" harbors in the United States on the East Coast. It is, therefore, incumbent particularly in this atomic-hydrogen age that there be no obstructions to the strategic use of this particular Bay due to either enemy action or casualty in a narrow opening as proposed by the Engineers.

It might be well to point out and to amplify the statements of some of the previous speakers, to point out that a capital ship must immediately make a fifty-four degree turn on entering the harbor. He makes a similar turn in the opposite direction in leaving the harbor. It might be well to note as well, that just as soon as he makes this fifty-four degree turn on entering the harbor that he then returns in, particularly on ebb tide, to the end of the sweep which is almost a direct north and south sweep. So that the pilot of the Naval Base advises us - - and we have some very skillful pilots - - that it can be pretty tricky business to run a two hundred sixty-five million dollar vessel through a one thousand foot opening at a fifty-four degree turn at the strongest point of an ebb tide.

Additionally, it hasn't been brought out, but this particular barrier will lower the water level of the Bay approximately two to two and a half feet. Now if you will look at the chart, particularly to the area north of Conanicut Island, you will see that we have a channel

which we take our present type carriers into. The depth of water in that channel is about thirty-four, thirty-five feet. If the drafts of some of the carriers we are bringing in there are thirty to thirty-two to thirty-five feet, now we are going to have a fine time running a thirty-three foot draft carrier in thirty-three foot of water. It is rather difficult navigation.

Another point that we would like to make at this time is the fact that Narragansett Bay is not located in Vicksburg. We have a very strong icine coming down the Taunton River, and it is our concern that what possible effects on our installations, and particularly our small boating are going to occur at the time when the ice starts down from the Taunton River and Blackstone River, and Providence River. It admittedly hasn't frozen over since 1943 or 1944, but those of us who have lived here for many, some years know that it can.

That about summarizes about what we have to say.

We find completely unacceptable the one thousand foot opening, primarily on the basis of the difficulty in navigation. We object to the depth of the particular barrier at fifty feet, because it cuts off - - Should we have a mammoth tanker or one of our ships in distress drawing more than fifty feet of water, which is possible in mammoth tankers, because it is possible that we would not be able to have the Newport Harbor and its facilities as a repair facility for that particular ship.

Now that about summarizes what we have considered. We have pointed these things out in conversation with and correspondence with

the Army Engineers.

LT. COLONEL WACHENDORF: Your grade, sir, is Captain, Commander, Assistant to the Plans Officer, Mr. King.

Thank you very much.

Is there anyone else who wishes to be heard at this time?

This gentleman has the floor.

MR. CHARLES F. CHAPIN: My name is Chapin, and I represent the small boating interests in the Bay.

First of all, I think that somewhat I would like to inquire into some of your assumptions.

Firstly, you made an assumption that something over two times the damages in the Lower Bay or something like that. I would like to inquire as to how often you expect these hurricanes to occur? Nobody has determined what causes hurricanes, and I don't see how you can make a prediction that involves loss in the future due to hurricanes if you don't know how often they are going to occur.

Between 1938 and one previous to that, I believe, there was a lapse of somewhat over a hundred years without any hurricanes. And it is possible that from 1954 and the next hurricane, there could also be a hundred years and your figures would be way off.

Secondly, from what I understand, your model that you built somewhere down south to represent the Bay to simulate your conditions, you merely pumped water at the Bay making a single wave. I don't see how that can possibly reflect what wind and tidal action could do in the Bay under sustained conditions of a few hours.

Also, I am not even sure of that, in a model you couldn't possibly from skin tricks to what not, simulate what actually would happen.

Another assumption -- I don't know if it is made by the Engineers, but it was made by a number of people here tonight -- that is the combination of wind and water damage in one. Quite a number of people talked about returning of utilities to service and damaging of water facilities. I am sure that much of that was done by winds, by blowing down trees and what not, and also carrying all the water in the air into fresh water ponds.

That about sums up what my question is.

Now I would like to say that from my knowledge of small boating interests and yachting in this area and on the East Coast, that Newport is considered one of the very nice harbors to come into, and is always the base for two major yacht races, the Annapolis Race and the Bermuda Race, and also the number of cruises which bring a number of boats in here during the summer season.

When the yachts come in here, they bring an awful lot of business. I don't know what in dollars, but when they tie up in here in the summer the merchants along Thames Street do a land office business selling food, and clothing, and what not.

I believe it was two years ago that when the Annapolis Race was moved to New London for the first time in some years, Newport really cried out that was terrible. They were losing all this money.

I believe that if this barrier was put in, that yachting

interests would lose a lot of this desire to come to Newport, because they would have the same conditions, not necessarily from the point of view of a race, but from going in and out, that they have from going out of New London, which was the reason it was moved to Newport in the first place.

I think that also a lot of people would by-pass Newport to go possibly over to Sakonnet or stop someplace else if they thought they would have to contend with fog and tide going in and out of the Bay. And this hasn't got anything to do with the tidal barrier, but I am sure that if Newport has future intentions of building some kind of harbor facility down here in the marina form to bring and build up its yachting interests, that a lot of that, the benefits of that, would go to waste if they put in a tidal barrier, because yachting interests wouldn't be so desirous to come.

MR. COLONEL WACHENDORF: Thank you, sir.

Does that conclude everyone who wants to be heard from?

Is there anyone else who has a statement to make who wishes to be heard at this time?

(No response.)

Several questions have been raised on which I might like to comment or ask some of our Engineers to comment on, and without any particular order, in which they were presented.

First of all, the question was raised as to how we ascertain this cost-benefits or benefits cost ratio, which I commented on at the start of the hearing. I assure you we take credit for only the salt

water flooding and hurricane tidal damages which we feel will be prevented by this proposed project, and not the salt water in the air or wind damage.

As far as when the next hurricane is coming, ladies and gentlemen, I know that you will agree with me when we hope that we, God forbid, that Rhode Island ever has another hurricane. In our computations, since we are required to establish some frequency, we base it on past experience; in this case, if I am not mistaken, on a period of fifty years, is that correct?

MR. KROPPER: Yes.

LT. COLONEL WACHENDORF: I want to call attention, however, that if either one of these single hurricanes, which have occurred relatively recently, would more than pay their way if these projects had been constructed in so far as the prevention of damages were concerned at that time. I think that is approximately correct, isn't it.

MR. KROPPER: Yes.

LT. COLONEL WACHENDORF: Now there was another question raised about the wind. We can not protect from the wind. I would like to say that it is not the purpose of our project.

On the other hand, we provide for the effects of the wind in our design.

The question was raised on the effect on average tide in the Bay. And the fact it was raised, which is, I believe, that there may be some misconception on the total magnitude of the effect of the

proposed barriers on the high tide in the Bay. I better check my figures here, but as I recall, based on our studies, we believe that the high tide would be reduced throughout the Bay an average of about eight-tenths of a foot on high tide, and not two feet as has been mentioned here tonight.

That is in this channel, it would be less than that in the channel based on our studies, but considerably less than the two foot figure which was mentioned.

Another point which might be mentioned at the same time, instead of having the low, you would have a low tide, which would be approximately the same amount higher than your low tide if these barriers were not in place.

This is one very important point, which I would like to make clear. If there is any question on it, I would be glad to comment further.

The Corps of Engineers has made no, made no report on this survey as yet, as I hope I made clear at the start of this hearing, this is a proposal. We came down here to give you people an opportunity to present your views on this proposal or any alternate proposal. And I certainly feel that has been done here tonight. I think the hearing has served its purpose, but I want to make very clear that this is a proposal.

The Corps of Engineers has submitted no report yet. We are down here to listen to your comments, and as far as that goes your proposals, alternate proposals on this very important problem, that

we are attempting to solve.

The question was raised on salinity changing. We have received some data on that. If I am not mistaken the source of our estimates is the work that was done for us by the Narragansett Marine Laboratory on contract work, is that not correct? I believe the estimate for the change in salinity, if this barrier as proposed is put in is a maximum of three parts per thousand reduction, two to three parts reduction. That compares to the present salinity of eighteen parts per thousand in Providence and thirty-two per thousand at Beavertail. Is that correct?

MR. DAVID E. KINNEY: Are you dropping it from eighteen to to three or is it from eighteen to fifty?

LT. COLONEL WACHENDORF: Your name please?

MR. KINNEY: David Kinney.

LT. COLONEL WACHENDORF: Mr. Kinney, the question was what is the change. It is a reduction of three parts per thousand generally throughout the Bay, and that is applied against a present salinity of eighteen parts per thousand in Providence and thirty-two at Beavertail. I might say that is a maximum of three parts and not an average. It varies from one to three parts at various locations. That is an estimate.

I have one item here. I would like to ask Mr. McAleer if he would care to comment on it further, on my comments on the occurrence figures.

Would you like to go into that, how we arrived at our benefits?

MR. JOHN B. McALEER: Yes, Colonel.

We have made a historical study of hurricanes since 1635, and we find there have been approximately twelve hurricanes which caused severe flooding in this area, in approximately three hundred years.

The first recording was in 1635 when it was reported that the Indians climbed trees to avoid drowning. Reports of the levels at that time varied. One report was a rise of twenty feet right up and down. Another report said the water rose fourteen feet above the normal spring high tide.

There was another hurricane about the same magnitude in 1638. And the twelve great historical hurricanes have been spread over the last three hundred years.

LT. COLONEL WACHENDORF: Thank you, Mr. McAleer.

One other comment I took a note on and someone commented on.

Ladies and gentlemen, the Corps of Engineers doesn't claim to have absolute knowledge -- I believe it was the term used here -- as General Fleming stated in Providence last night, this is a very complicated problem. Anybody who claims he has all the answers would certainly not be telling the truth, because there are many things about which the Corps of Engineers don't know.

By the same token, after this year or fourteen months of working on it, we feel that there are many things that we know a great deal more now than we did before.

With that comment, I would like to ask Lt. Kropfer -- we have two questions dealing with effects on navigation -- do you have any

comments on that?

MR. HERMAN KROFFER: I wouldn't want anyone to think that we are unmindful of the navigation problem in Narragansett Bay. We have gone to the pilots. We have sat down with them. We have talked with them. We have explored their problems.

To demonstrate that to you I would like to read a memorandum signed by Mr. Henry Ise¹, dated July 12, 1956, pertaining to the minutes of the meeting of the hurricane survey, Narragansett Bay, Rhode Island Pilots Association and others concerned.

On July 9, 1956, a meeting of the Rhode Island Pilots Association was held at the Narragansett Hotel. The meeting was called by Mr. Henry Ise¹ in his capacity as chairman of the Rhode Island Hurricane Survey Advisory Committee, and member of the Rhode Island Pilotage Commission, for the purpose of obtaining the views of the pilots concerning the sizes of navigation openings in hurricane bay barriers under study in Narragansett Bay.

In attendance at the meeting were three pilots; Captain Edwin E. Davies, Jr., Captain Myron C. Ballou and Captain Bernard E. Langley; Messrs. J. B. McAleer, A. Canzanelli and Lincoln Reid of the New England Division, Corps of Engineers, and Mr. Henry Ise¹, Rhode Island Division of Harbors and Rivers. The pilots who attended the meeting spoke as individuals rather than for their association. They were unanimous in expressing a preference for bay barriers in the Lower Bay where larger navigation openings could be provided. They also requested that bay barriers be constructed at right angles to the

navigation channel in order that cross-currents be kept to a minimum.

The consensus of the group was that the minimum navigation openings required in hurricane protective bay barriers are as follows:

a. Lower Bay Barriers:

East Passage south of Bull Point near Newport - minimum opening 800 to 1,000 feet in width, with a depth of fifty feet at mean low water.

West Passage near Jamestown Bridge - minimum width 600 feet and fifty foot depth.

b. Middle Bay Barriers:

East Passage, Prudence Island to Portsmouth about 1,000 feet north of Sandy Point - minimum width 600 feet and forty foot depth.

West Passage, Pojac Point to Patience Island thence to Prudence Island - minimum width 150 feet, thirty foot depth.

c. Connecticut Point Barrier - minimum width 400 to 600 feet with a depth of forty feet.

d. Fields Point Barrier - Two openings 150 feet wide, forty foot depth.

That, I understand, was signed by Mr. Ise'.

And I don't want anyone to go home tonight under the assumption that we would come up with a proposal of this character without discussing it with navigation interests.

We also have taken up the problem with the American Merchant

Marine Institute at 11 Broadway, New York. They have concurred in the size of the barriers that were suggested tonight.

LT. COLONEL WACHENDORF: There was one additional remark which I would like to make on that subject that related to the width of the Lower Bay Barriers.

I made the statement, I believe, earlier. We are not unmindful of the requirements and desires of interests in the Lower Bay as presented here tonight. But in order to prevent the damages and the effect of reduction required up in the Bay, the proposed openings are the maximum which we feel can be placed there.

Several questions were raised on the effect on fish and wildlife, a very pertinent question. It was brought out in the hearing in Providence last night. Studies have been underway for the past, during the past year, on this subject, both by the Federal Fish and Wildlife and by the, certain studies, by the Narragansett Marine Laboratory have a bearing on the subject. But at this time it appears that additional study and additional funds for such a study are required by these agencies before a definite answer as to the effect of these proposed barriers on this very important phase can be made.

At this time I would like to acknowledge that we have received in the mail the resolution of the Bristol Council requesting us to consider breakwaters, breakwater protection for Bristol Harbor, as presented here tonight. I assure you, all of you, that everything presented here, and all of the proposals, the comments, will be carefully considered by us before any report is finalized and forwarded

on this very difficult problem.

I particularly appreciate the arrangements which have been made by your city officials here and your Hurricane Committee for us to use this auditorium tonight, your patience in sitting here and listening to a relatively long hearing, and I appreciate very much your attendance.

Do you wish to say something at this time?

MR. MURPHY: Just one short question, Colonel.

First of all I want to apologize for trying to create a real problem earlier in the evening.

Was the presentation by this gentleman presenting -- I didn't get his name -- is that an official protest or objection by the Navy at this hearing? I don't recall the name. Was it Mr. King?

LT. COLONEL WACHENDORF: Would you mind giving your name?

MR. MURPHY: Francis J. Murphy of Bristol.

LT. COLONEL WACHENDORF: The question is by Francis J. Murphy of Bristol.

Mr. King stated, as I recall, that he was speaking as an Assistant to the Plans Officer at Newport.

Mr. King, would you care to comment further?

MR. KING: I would clarify that, Colonel, by stating that in my presentation, I presented it as an individual. However, the sum and substance of what I have stated has been an official correspondence by the Commandant of the First Naval District.

LT. COLONEL WACHENDORF: Thank you very much.

Does that answer your question?

MR. KING: It is merely informative to this particular group as to the general feeling of the Navy.

LT. COLONEL WACHENDORF: Thank you, Mr. King.

MR. R. S. BOSWORTH, JR.: My name is Bosworth.

I would like to direct a question to Mr. McAleer, that is in regards to the dropping of the Middle Bay Barrier.

We have discussed this matter before with the State Advisory Committee, and it is my impression that the Middle Bay Barrier was dropped primarily because of navigation objections.

May I have that point clarified?

LT. COLONEL WACHENDORF: Captain, let me take you off the hook on this. That is, as far as I know, there is no, that is entirely untrue. I am speaking as an individual too. I will have Mr. McAleer explain more about it. He will tell you why it was dropped. We thought it was a magic solution. In fact I went around and talked to interested groups. I was most enthusiastic about the Middle Bay Barrier. There were things about it that appealed to us.

Without going into the details, I think in view of the matters covered here tonight you can see what they are. Unfortunately there are some problems too. There are conflicting interests in the Middle Bay Barrier, which extend from above Potowomut, above Sunset Point, down across the vicinity to Prudence Island, across from Prudence to Portsmouth. Prudence to Portsmouth, that particular barrier when tested in our model studies showed there, that this is

contrary to the results from the other barriers. Incidentally, those appreciable build-ups, I say appreciable build-ups in front of the barrier as a result of the placement, in other words, it means that in the hurricane, the level of water in front of the barrier would have been higher than it would be if the barrier hadn't been there in the same hurricane.

I say appreciable, it may be a matter of two to three feet, a couple of feet, perhaps, but certainly it was such that we couldn't permit the additional damages below the barrier to obtain the benefits which would accrue to that particular solution. That is the reason that we no longer considered it.

Does that answer your question?

MR. ROSENTHAL: It does.

It was my impression at the time that Sunset Point and possibly Millville would receive the most damage, that was they would object to the matter.

LT. COLONEL WACHENDORF: I know of no objection from them. We obviously noted the location of Sunset Point but that other locality would in fact, the damage would extend well along the Bay from such a proposal.

This gentleman in the back.

Would you come up here and state your name please?

MR. JOHN M. BURKE: My name is John M. Burke.

I would just like to ask a question of the Navy. One of the points they have brought out in objection to a barrier across the Bay

entrance has been the fact that it might perhaps restrict their navigation. It would restrict the normal traffic particularly in times of emergency.

If I recall correctly, having been in the Navy, in an emergency every accessible harbor in this country and our other territories put, had a barrier put up by the Navy. That is they put up barriers. They restricted the movement into every harbor, so why would their objection hold in peace time?

LT. COLONEL WACHENDORF: I prefer that you address your questions to me as the Chairman.

MR. BLAKE: Yes, sir.

LT. COLONEL WACHENDORF: I don't intend to have anyone here present consent unless he desires.

Sir, I have noted your comment and unless there is anyone present who would like to comment on it further, unless there is any further objection, we will include your comments in the record.

MR. BLAKE: I would like to have that go in the record.

LT. COLONEL WACHENDORF: It will go in the record.

Any further comments or questions?

MR. CLETUS DENNIS: I am Cletus Dennis, United States Assistant Range Engineer for the Underwater Ordinance.

My question is more or less personal. It has to do with the sedimentation.

We have about one hundred fifty feet just east of Bull Island. Is that going to fill in? How about the rest of the range which ex-

tends from Bull Island to - - -

MR. McALISTER: So far as we know there would be no major changes in the depth, the silting in Narragansett Bay as a result of the barriers. The Narragansett Marine Laboratory has made studies of present conditions and estimates of the future conditions, and there is nothing that would lead us to believe that this would be so as a result of the barriers.

LT. COLONEL WACHENDORF: May I have the name of the gentleman who asked the question please?

MR. DENNIS: Cletus Dennis.

LT. COLONEL WACHENDORF: Do you have a card for the Stenographer please?

Thank you.

Ladies and gentlemen, one more man here wants to be heard.

MR. WEAVER: I was just wondering - -

LT. COLONEL WACHENDORF: Your name please?

MR. WEAVER: George D. Weaver.

In view of the fact that at the conclusion of these hearings, there is a possibility that no further hearings will be held, we have two formidable forces here in the United States Army and the United States Navy, who have definite problems as far as the Lower Bay Barriers are concerned.

I would just like to state for the record, for the people, that two feet of water may not seem much in Narragansett Bay, but in the living room it seems like an awful lot.

What do the Army Engineers now, or do they intend to build any, do any survey into Newport, particularly, in as far as a hurricane barrier wall is concerned in the affected areas? If not, we are hopeful that some -- We are hopeful that consideration will be given to that problem.

LT. COLONEL WACHENDORF: Thank you very much. I would like to comment, as I said before, we will certainly consider all of the material and the comments that have been presented here tonight, and all that have been presented to us in correspondence.

I say again, our report is not written, and that is the purpose of holding these hearings to let all interested parties present their ideas on the subject.

Now unless there is someone else who hasn't had an opportunity to be heard, I will once again -- This gentleman.

MR. ANDREW A. STONE: Being a layman, I would like to have a point of information. It seems the most valid objection that the Navy has had is to the depth of the water there. Fifty feet isn't deep enough for those mammoth tankers and ships that they are building.

What would be the objection to increasing the depth at that point? Would it have an effect to negative any of the advantages of this barrier?

LT. COLONEL WACHENDORF: Yes, it would.

The amount of water which comes into the Upper Bay is among other things the cross-section of the openings and, of course, deeper openings would increase the cross-section.

Is there anyone else who wants to speak in rebuttal of any of the opposition, or more opposition, or in opposition who hasn't had an opportunity to speak?

Well, ladies and gentlemen, I thank you very much.

This hearing is adjourned.

Adjournment: 10:36 P.M.